FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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Chicken Market Reflects Confusion After FDA Ban

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Consolidated reports available here at U.S. Department of Agriculture headquarters show that the broiler market—all the way from the storage operation to the retail level and the consumer—reflects confusion.

At the consumer level there appears to be general confusion over terms of the Food & Drug Administration ban on caponettes. The use of the word poultry in the government's announcement has some consumers thinking that the ban is on turkeys and chickens of all types.

Marking Time

The broiler market appears to be marking time. Shall the consumer buy poultry now that this shadow of hazard has been cast in the actions of Arthur S. Flemming, secretary of health, education and welfare?

Basically, what Mr. Flemming said was that he had obtained full agreement between the producers, processors and distributive trade that they would not market "caponettes" which resulted from the use of stilbestrol and that he would move to withdraw previous use authorization of the use of this chemical compound in poultry production.

The poultry industry may be forever grateful to True D. Morse, under secretary of agriculture, who was the focal point of the controversy which ended in the Flemming statement last week. Ultimately, as the

(Turn to CHICKEN, page 8)

Governors to Ask Reduction in Grain Freight Rates

MANCHESTER, N.H. — Action soon will be demanded for a reduction in freight rates on grain shipped into New England, Gov. Wesley Powell told members of the New Hampshire Poultry Growers Assn. at their annual winter meeting at the Masonic Temple here Dec. 3.

He said a sub-committee of New England governors, possibly including himself, would go to Washington, D.C., to demand a solution of the "unwarranted freight transportation cost situation" affecting the area's poultry and dairy industries.

Gov. Powell declared the "direct approach" plan would be the most effective, citing other instances where

(Turn to FREIGHT RATES, page 8)

Suggests Way to End Stilbestrol-Feed Problem

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Further discussion this week of a top official's proposals on Delaney clause changes brought out points of major significance in connection with the use of estrogens in feed.

If suggested legislative changes in the food and drug law are proposed and then enacted, the way would again be cleared for new uses of stilbestrol in cattle feed.

This is noted in connection with comments last week on the Delaney clause of the food additive amendment by Arthur S. Flemming, secretary of health, education and welfare. The comments were made at a press conference announcing the halt in the sale of stilbestrol-treated chickens.

Food and Drug Administration officials reported this week that some of Mr. Flemming's comments have not been well understood.

As reported previously (Feedstuffs, Dec. 12), the secretary indicated that he planned to seek elimination of the legal situation which has permitted previously cleared uses of stilbestrol in cattle feed while denying new uses under the current interpretation of the Delaney clause. This was interpreted to mean that he would recommend to Congress that the law be revised so that present new-drug authorizations for estrogens, granted prior to the Delaney amendment action, could be revoked.

However, it is now understood that Mr. Flemming has suggested additional amending legislation which would change the Delaney clause so that feed additives which are suspected carcinogens would not be ruled out if there is no residue in human food. Since no stilbestrol has been found in beef or lamb from treated animals, this presumably would exempt stilbestrol from the Delaney clause.

Two Changes Proposed

FDA officials explain that Mr. Flemming is suggesting two separate changes in the food and drug law.

1. One would amend the "prior sanction" provisions of the law so that any Delaney clause "exemptions"

(Turn to STILBESTROL, page 39)

Broiler Demand Affected Little, Apparently, by Caponette Ban

By FRED E. TUNKS
Feedstuffs Staff

The American housewife's reaction to press attention given the government's move to eliminate use of stilbestrol implants in producing caponettes appears not to have had much significance in its effect on broiler prices.

The U.S. Department of Agriculture reported that the confusion created by last week's statement from Arthur S. Flemming, secretary of health, education and welfare, slowed movement a little in some markets. However, because less than 1% of all the poultry in commercial distribution had received stilbestrol treatment and because all caponettes were immediately removed from distribution in compliance with Secretary Flemming's request, reactions appeared to be slight.

Demand Generally Dull

The New York marketing service office of USDA reported that poultry demand was generally dull during the week ended Dec. 12. Because many processors were either not operating on a regular schedule or were curtailing operations sharply.

This situation, according to USDA, was the result of a comibnation of factors. This is the time of year when the consumer gives the turkey the nod over the broiler as the meat dish for the holiday table. Relatively high broiler prices drew some resistance and buyers were cautious awaiting public reaction to the government announcement that removed stilbestrol-treated poultry from the market.

USDA said live prices were generally unchanged from last week, but the latest reporting period closed with a weak undertone. Slaughter in the eight principal broiler producing areas

(Turn to BROILER DEMAND, page 8)

Uncertainty on East Coast and Gulf Docks Puts Upward Push Behind Millfeed Market

Millfeed prices moved upward by leaps and bounds this week as traders feared east coast and Gulf dock strikes would be resumed when the cooling off period expires Dec. 27.

Feedstuffs learned Dec. 18 that while the eastern situation was near settlement, National Labor Relations Board negotiations in Gulf ports were breaking down and the return of strikes seemed possible.

Strike developments have created a stir among millfeed and soybean meal traders for these reasons: If dock activity halts, flour mills are likely to cut back operations for lack of export outlets. Millfeeds output, of course, would go down too, reducing their availability. Idle dock hands would hurt soybean meal exports and increase domestic supplies.

It was reported Dec. 17 that NLRB was to conduct a "last offer" ballot Dec. 21-22 in Galveston, New Orleans and Mobile where workers have balked at New York dock agreement.

Negotiations are expected to continue up to the Dec. 27 settlement deadline. There's at least a 50-50 chance there wouldn't be a strike on the east coast. It appeared likely that the east coast ports will not join a Gulf ports strike, if it occurs.

The unsettled feeling in the dock strike situation prompted some major mixers to order substantial amounts

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FEEDSTUFFS *Features This Week*

NUTRITION RESEARCH—An article on **page 26** tells of research to determine the proper protein level for chicken layer diets.

PELLETING—Several engineering aspects and costs of a pelleting installation are included in an article starting on **page 34.**

RESEARCH FARM—An article on **page 40** describes the facilities of a new research and demonstration farm opened in Wisconsin.

MERCHANDISING—An article on **page 52** tells how an Alabama dealer builds his business with mobile feed mills and pilot feeding projects.

MILL OPERATIONS—Specialization of a new mill in custom mixing and grain bank operations described on **page 74.**

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Purina Sales, Profits Set Record; 5-Million Ton Mark Passed

ST. LOUIS, MO.—For the second straight year, Ralston Purina Co. has surpassed all previous records, both in volume of sales and profits, according to the firm's 1959 annual report. The report covers the fiscal year ending Sept. 30, 1959.

Net sales increased more than $37 million, jumping from $493,527,453 in 1958 to $530,571,672 this year. Net earnings rose from $17,468,759 last year to $17,784,368 in 1959. (See tables.)

"Through the combined efforts of our Chow, Ralston and International divisions, our company manufactured and sold 5,034,661 tons of feed, making this the first year in our company's history that the 5 million ton mark has been passed," Donald Danforth, chairman of the board, points out in the accompanying letter. "This represents a substantial increase in our Chow tonnage when you consider that we manufactured and sold only 3,837,327 tons four years ago."

Mr. Danforth went on:

"Contributing to the attainment of the 5 million ton milestone were the ever-expanding sales of Purina Dog Chow, now the number one brand in sales among all dog foods, canned or

(Turn to PURINA, page 93)

HAPPY HOLIDAYS

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The regional circulation of this issue is concentrated in the southwestern states

Top of the Hopper

FURTHER CLARIFICATION of some comments made by Arthur S. Flemming, secretary of health, education and welfare, at his press conference last week appear to offer the strongest ray of hope to date that the Delaney dilemma can be solved. These comments, not a part of the published statement issued by the Secretary, pertained to the future use of stilbestrol in beef cattle rations, and some varying versions of the interview were published.

Now, however, officials of the Food and Drug Administration explain that Mr. Flemming is in favor of two changes in the food additive law. He would like to see elimination of the "grandfather clause" which permits use of additives by manufacturers who were using them prior to publication of the applicable regulations but denies use of the same additives to others. Secondly, the Secretary says he favors a change in the Delaney clause to permit use of estrogenic substances in feed for animals if it can be shown by scientific evidence that no residues of the products remain in food for human consumption.

Since no residues of stilbestrol have been found in beef, mutton or lamb —as was emphasized in the Secretary's formal statement—it would seem that the proposed change in the law could provide an answer for the uncertainties which presently surround the future use of this feed additive.

Applying the same approach to those arsenical compounds which presently are in difficulty with FDA's interpretation of the Delaney clause, one could hope for a brighter outlook here, too. That is, if use of suspected carcinogens can be regulated on the basis of elimination of residues in resulting food products, rather than on feeding of the compounds per se, FDA's concern could be directed more objectively toward proper observance of withdrawal directions.

There are a good many "if's" in these more hopeful prospects, the principal one, of course, being whether or not Congress can be persuaded to change the law. The support of Mr. Flemming and FDA in recommending a change would be a potent force, but there are strong political tides to combat, too, particularly in an election year.

And of great importance, too, is the need to provide thoroughly convincing evidence that drugs can be handled safely and according to feeding directions. A warning to the feed industry and its customers issued last week by the American Feed Manufacturers Assn. and the Animal Health Institute strongly emphasizes this point, and it cannot be stated too strongly that this warning should be heeded.

"Failure to observe the requirement for withdrawing certain medicaments prior to marketing the birds and/or animals could lead to serious consequences for all segments of the industries involved," the AFMA and AHI state.

Reports are currently circulating in the Southeast that FDA is going to crack down hard on poultry being processed with traces of a coccidiostat in it. According to reports, some carelessness in regard to withdrawal directions is causing the FDA concern, and strong enforcement action could mean heavy losses for those who might become involved.

The type of loss created by condemnation of a batch of broilers would be negligible, however, in comparison with the potential loss to the industry if carelessness cannot be corrected. Immediate correction of problems of this type, if and where they exist, is imperative so as not to jeopardize the more hopeful outlook which now exists for improving the feed regulatory picture.

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JUST HOW MUCH harm the publicity surrounding the FDA's action on caponettes has done in the way of scaring the public away from chicken meat

(Turn to **TOP OF THE HOPPER**, page 89)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

A steady trend in the demand for formula feeds but an upturn in prices for some ingredients are the major observations to be made this week. Going into Christmas week, feed business is good, but nothing better. The industry apparently will be able to take care of production requirements nicely even though the holidays will cut into operating time. Reports indicate that feed mixers were in the ingredient markets this week to cover their needs, at least partially through the holidays. Advances in mixed feed prices are expected because of ingredient development. Dairy feeds keep on setting the pace in sales, but dealers in hog feeds said that phase of the business was slow and little improvement seemed to be ahead because of discouraging feeding ratios. The hog-corn ratio was 11.1 this week, compared with 11.2 last week and 15.3 the same week a year earlier. The wholesale feedstuffs price index advanced 1.5 points to 82 this week. A year ago this index was 91.5. The feed-grain index, at 63.6, was little different than the 63.3 level of the week before and a bit lower than the 64.4 ratio of a year earlier. (Ingredient prices in detail on pages 90-93.)

Northwest

With perhaps an exception here and there, trade in formula feeds is fairly good for this time of year when the holiday spirit takes over. This week's volume is about at the same level as last week's—perhaps a bit stronger.

Although dairy feed demand has stimulated production, some feed orders from dealers and feeders are coming in ahead of when they would normally be placed because of the anticipated production holidays.

No one seems to think that feed demand will be great enough to cause any production jams during the short holiday work weeks. It's expected that any backlog in orders can be taken care of without any trouble.

The market for some major ingredients—including millfeeds, soybean oil meal and animal proteins—was strengthened during the week. Apparently feed mixers were in the market to cover their needs through the holidays. The boost in these ingredients probably will bring about a price increase in mixed feeds.

Northeast

The anticipated pick up in demand for formula feeds failed to materialize and sales continued to lag.

End products, however, fared fairly well. Broiler prices rose 1¢ in the East to 18¢ a pound, with a high of 20¢. One spokesman said broilers are likely to stage a comeback for the next 90 days when "the market will get crowded again."

Milk is producing a good return, but butter dropped 4¢ lb. in a major move. However, dairy farmers in this area are more concerned with milk than they are with butter. Eggs held just about steady.

Evidently consumers have ample supplies of on-the-farm grains because so far there hasn't been any increase in inquiries for complete feeds.

Dairy feeds to mix on the farm continued to lead in sales tonnage, followed by egg mashes. Turkey and broiler feeds were in much less demand.

The ingredient market was irregularly higher last week.

Southwest

Formula feed business in the Southwest was a little more draggy this week than last. At best, some mills are calling it average.

Most sales departments reported business a little slower than last week. Mill running time will average about 4½ days, normal shifts. Several mills are stretching out their production into five days but they admit they could turn it out in less if they wanted to. An occasional mill is running six days, but this pace is generally in anticipation of the Christmas week shut-down.

The holiday season is getting some of the blame for slow business, especially where the entire line of feed is moving slower. Poor feeding ratios are also blamed for keeping business from being better. Low hog and egg prices particularly are causing producers to hold their feeding of formula rations to a minimum, giving their livestock grain and supplementing with a little protein.

Cattle feed business is the pacesetter. In the Texas and Oklahoma area, mills are running very well on steer and cattle rations. In the Kansas City area, cattle rations are also being ordered against bookings at a fairly good pace. Dairy feed movement is good.

In view of the moderate to slow feed business, most mills express wonder at the strength that appeared this week in ingredient markets. Millfeed made spectacular advances. Grains and soybean meal were also up. Price lists for next week are expected to be up 50¢ to as much as $2.

Southeast

Poultry feed business in the Southeast still continues to improve slightly each week. Dairy and hog feed business remains practically unchanged. With slower movements of broilers to processors, it has increased prices 1-1½¢ lb. this week. Prices are generally reported at 17½-18¢ lb., f.o.b. the farm.

Heavy trading in soybean meal in the Mississippi Valley caused prices the early part of the week to advance as much as $1 ton, but with lack of buyers, meal prices are showing signs of weakening. Many processors are reporting the greater part of their production in oil meals has been sold through January and most of the offerings now are for February forward shipments.

The concentrate plants in Florida are on slow production, still causing citrus pulp to be in tight supply, with prices remaining firm at $32.50. It is now reported that heavy production will not begin until the week of Dec. 28. Most feed ingredient buyers of major proteins continue to buy their supplies on an as-needed basis.

Central States

Formula feed trade in the central states area during the current week has been moving along on a fairly even keel. It is true that the better trade noticeable the final week in November and again during the first week of the current month has tended to taper off, but this does not mean

(Turn to **MARKETS**, page 95)

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Program Set for Kansas Formula Feed Conference

MANHATTAN, KANSAS — Latest developments in animal nutrition, management and formula feeds will be presented at the 15th annual Kansas Formula Feed Conference Jan. 4-5 at Kansas State University.

Attending will be approximately 300 representatives and salesmen of feed companies, county agents and researchers interested in animal nutrition studies, according to T. B. Avery, head of K-State's department of poultry husbandry and chairman of the conference.

The annual event is sponsored by the Kansas formula feed manufacturers, Kansas state board of agriculture, Midwest Feed Manufacturers Assn., Kansas Grain & Feed Dealers Assn. and Kansas State University.

According to Prof. Avery, management information will be stressed to help bring the feed industry up to date on latest practices and recommendations.

Another conference highlight will be a talk on what the Food and Drug Administration is doing, and is planning to do, in relation to medicated feeds. The speaker will be Sam Fine, chief of the Kansas City district of the FDA.

The traditional conference banquet will be at noon Jan. 5, so that visitors may attend the K-State and University of Colorado basketball game the evening of Jan. 4.

S. E. Group Urges Egg Prices Based On Quality, Not Area

ATLANTA, GA.—The need for egg producers to assume greater responsibility in marketing and price determination of the eggs they produce was stressed by the egg committee of the Southeastern Poultry & Egg Assn. here recently.

Harold E. Ford, executive secretary, reported that committee members questioned the method of establishing prices based on area designation and passed a motion to recommend to the board of directors that the Southeastern association work to get the egg quotations based on a quality basis rather than by area designation. Mr. Ford said southeastern producers believe that Grade A egg should be of the same value regardless of the location of its production.

Visiting with the committee were Gordon Urner, Urner-Barry Co., New York egg market reporting firm; Berwyn Gehgan, manager, Northeastern Poultry Cooperative Assn., and Dr. Alfred Van Wagenen, research direc-

(Turn to S. E. GROUP, page 39)

Grain Storage Rate Meeting Adjourns

WASHINGTON—The formal session between U.S. Department of Agriculture Commodity Stabilization Service officials and the grain industry storage committee adjourned abruptly this week without reaching any conclusions.

It has been learned that after reading the draft of an amended storage agreement, the trade group stated that they were not prepared to make any comment without a more searching examination of the government draft.

Previously, USDA officials told Feedstuffs that it did not intend to present any new rate proposals to the trade since they have not had time to examine data which their field staff had obtained from their field survey of costs.

Shutdowns Advance Soy Meal Futures

MEMPHIS, TENN.—Oilseed meal futures prices were irregular on the Memphis Board of Trade during the past week, compared with a week earlier.

Soybean oil meal made an advance based on a drastic setback in soybean futures for part of the period, largely predicated upon reports of shutdowns in the soybean industry. This had the effect of firming the soybean oil meal market, in view of anticipating the smaller production.

Another factor was good business in cash soybean oil meal. Cottonseed oil meal, on the other hand, declined due to slow business in the cash article.

Domestic feed business was reported to be slightly improved in some areas, but export demand was called sluggish.

Memphis basis soybean oil meal closed Dec. 15 $1@2 ton higher than on Dec. 8. Unrestricted soybean meal was unchanged to $1.35 higher. Bulk solvent cottonseed oil meal went down 50¢@$1.

Nominations Made For Kansas City Board of Trade

KANSAS CITY—Dewey E. Walter, the Pillsbury Co., and E. C. Hoebel, Bartlett & Co., have been nominated for the presidency of the Kansas City Board of Trade. Mr. Walter is currently first vice president.

John B. Ronan, B. C. Christopher & Co., second vice president, automatically becomes first vice president. Nominated for second vice president are Wayne A. Forcade, Mid-Continent Grain Co., and J. L. Young, Checkerboard Grain Co.

Placed in nomination for the six directorate posts are the following: R. J. Anderson, Norris Grain Co.; A. L. Handley, Wolcott & Lincoln, Inc.; S. C. Masters, Masters Grain Co.; H. R. Schmid, Midwestern Grain Co.; H. F. Jackman, Jr., Goffe & Carkener, Inc., and J. W. Whitacre, Archer-Daniels-Midland Co.

The following have been nominated for the five posts on the arbitration committee: George R. Bicknell, the Farmers Union Jobbing Assn.; Roy E. Lyman, Corn Products Refining Co.; R. F. Spurck, Russell-Miller Milling Co.; J. F. Baumgartner, Simonds-Shields-Theis Grain Co., and E. A. Hogan, Earl A. Hogan Co.

Nominated for the four directorate posts of the Grain Clearing Co. are: Hearne Christopher, B. C. Christopher & Co.; Frank W. Bartlett, Bartlett & Co.; W. J. McMahon, Klean Grain Co., and G. P. Scoular, Scoular-Bishop Grain Co.

Added to the nominating committee for next year will be J. B. Gregg, Morrison-Gregg-Mitchell Grain Co., and R. E. Swenson, General Mills, Inc.

Production at GMI Mill to Start Feb. 1

NAMPA, IDAHO — Production of the full line of General Mills, Inc. formula feeds will get under way by Feb. 1, according to Gus Volkman, manager of the company's plant here.

Milling equipment is being installed in a building at 424 2nd St. S., which was completely rebuilt following a fire about a year ago.

Storage bins for grains awaiting milling are being erected outside the building. Finished bulk feed will be stored in 1-ton portable bins in the warehouse. Also to be installed are two airlifts for transferring feed from storage to trucks.

J. J. O'Connor

M. D. Livengood

J. J. O'Connor Heads Walnut Grove Products

ATLANTIC, IOWA — J. J. O'Connor was elected president of Walnut Grove Products Co., Inc., at the regular meeting of the feed manufacturing firm's board of directors. E. A. Kelloway, who has been president since 1949, was named chairman of the board.

Mr. O'Connor joined Walnut Grove in 1951 as director of public relations, became vice president in 1952 and executive vice president in 1955. Before joining Walnut Grove, Mr. O'Connor served as superintendent of the Atlantic school system for four years.

He is past president of the National Feed Ingredients Assn. and now a member of its board of directors.

The board also elected Malcolm D. Livengood vice president in addition to his duties as treasurer of the company.

Mr. Livengood, a graduate of the State University of Iowa with a degree in commerce, joined Walnut Grove in 1948. He became secretary in 1951 and was elected secretary-treasurer in 1955.

Officers of the company are: Mr. Kelloway, chairman of the board; Mr. O'Connor, president; C. D. Becker, vice president; Mr. Livengood, vice president and treasurer; C. C. Hansen, secretary, and John L. Bunce, assistant to the president.

Walnut Grove serves eight Corn Belt states with plants in Atlantic, West Liberty, Independence and Cherokee, Iowa, and Elkhorn, Neb.

Equipment Leasing Program Announced By Myers-Sherman Co.

CHICAGO — A new long-term leasing program for the full line of Myers-Sherman feed processing equipment has been introduced.

The plan was announced jointly by C. Robert Myers, president, Myers-Sherman Co., Streator, Ill., and Robert Sheridan, president, Nationwide Leasing Co., Chicago.

The lease program will be conducted through Nationwide's facilities. Under the plan, users may lease either a single piece of equipment or the entire equipment needs of a complete feed plant, officials said. Equipment available under the lease plan includes the Myers-Sherman pneumatic Grainvayor, M-400 portable mill, Stump Gobbler, hammermills, mixers, molasses blenders, truck lifts, conveyors and other feed equipment.

Leases are available for periods of from three to five years, Mr. Myers said. He said renewal options are standard and available with all leases, and if desired, purchase options are also available.

"This lease plan will enable Myers-Sherman customers to obtain equipment without expending their liquid capital," Mr. Myers said. "This will permit them to use their capital instead for expanding operations or other business-building means."

He pointed out that the lease plan offers equipment users virtually 100% financing. Lease payments are tax deductible as operating expenses, he added. The lease plan will be available nationally from all Myers-Sherman sales representatives.

Soybean Futures Interest Off After Hike in Estimate

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—The big interest in soybean futures on the Chicago Board of Trade was reduced sharply this week when the U.S. Department of Agriculture disclosed its December final crop report, showing the soybean production estimate had zoomed by nearly 10 million bushels since the Nov. 1 estimate.

The final crop estimate was approximately 538 million bushels this year, as compared with a Nov. 1 estimate by USDA of about 528 million.

The impact of this news hit the extended market positions in the big Chicago commodity market at the opening and, subsequently, what appeared to be margin call selling near the close brought soybeans down close to the year's low price. Trade attitude is that the break in beans has not run its course, and further distress selling is likely to put the bean pit in a state of shock for some time ahead.

However, there still appears to be bullish background for a bean market recovery. Exports, through Dec. 9, were estimated at some 10 million bushels ahead of the same period last year. If this trend is continued, exports may attain the 135-million-bushel level predicted by some USDA

(Turn to SOYBEANS, page 39)

Explosion Damages Mobile Feed Mill Plant

GOODLETTSVILLE, TENN. — An explosion damaged buildings and equipment of the Seco, Inc., manufacturing division here, according to Paul J. Zimmerman, executive vice president. He said production of the firm's mobile feed mills would not be interrupted, however.

Mr. Zimmerman said a butane tank exploded only minutes after workmen had passed by it on their way to lunch. The blast, felt throughout the Goodlettsville area, ruined the main paint shop and caused several thousand dollars' damage to equipment. He said little or no damage was done to areas handling construction, fabrication and assembly.

The explosion came when a worker accidentally knocked a valve off the butane tank while moving it on a lifting mule, according to Mr. Zimmerman.

Employees returned to their jobs within five hours after the blast. There were no serious injuries, he said.

South Dakota Feed Aid To Be in Effect Soon

MADISON, S.D. — The emergency feed law passed by Congress last summer should be in operation in South Dakota very soon, Sen. Karl Mundt (R., S.D.) said.

The law provides that farmers and feeders in distress areas may buy, under certain circumstances, grain stored by the Commodity Credit Corp. Payment will be at the support price level.

Delay in making the law effective, the senator said, reportedly was due to difficulty in reaching interpretation of a provision relating to financial hardship and in the formulation of a program to allow distress buying without adverse effects on the market.

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Observations on Fast-Moving Events In S.E. Broiler Industry Cited

By Special Correspondent

Fast-moving events the past few months have kept the broiler industry, particularly in the Southeast, in the news—some of it discouraging, some of it spectacular and some of it indicating the industry may be adjusting itself to possible profitable operation in the immediate future.

Brightest spot in the picture was a recent upsurge in prices for broilers after a long period of record lows—in many cases lower than production costs.

While some operators view the increases as an indication the bottom of a price cycle has been reached, others point out that it can be interpreted to mean that the industry has finally set production volume to supply normal consumer demands.

Those insisting that problems of the industry stem from overproduction, and those who hold the strengthening of the market price has resulted from better sales and promotion efforts, may all be correct.

"Overproduction"

Looking at the picture from the "overproduction" viewpoint, some hold that bankruptcy of the Chemell hatching empire removed some 2 million chicks each week from growing outlets. Yet the chick placement reports for a given region have not necessarily reflected lower placements in that amount. Of course, it must be remembered that Chemell operated over a wide area and the total placement report could reasonably reflect the elimination of this source of baby chicks.

On the other hand, some of the Chemell production has been taken up by new facilities operated by former Chemell personnel and there is likelihood that other hatcheries have stepped up production to cover the previous Chemell output.

Practically all poultrymen agree the Chemell bankruptcy had one industry-wide effect—tightening of credit restrictions, from feed companies as well as bankers and factoring firms.

These restrictions have, no doubt, resulted in many operators putting their broiler business on a more firm financial basis, and there is reason to believe that some of the feed companies, as well as bankers, are helping broiler contractors to "set their house in order."

While the Chemell fiasco has been described as the result of a "total lack of management" by attorneys and accountants who have had the task of attempting to unravel the financial phases of the Chemell interlocking corporations, it has been stressed that the Chemell operation should not be considered typical of the industry itself.

Effect of Auctions

The increasing momentum of the auctions may have had something to do with the strengthening broiler prices, although the volume of all the auctions combined is still quite a way from being the bulk of the broilers sold.

Some hold that the reluctance of processors to buy birds on the auction is resulting in private deals which bypass open bidding on birds. Others counter this by pointing out that in many cases the processors are paying the prices as set by the auction through open bidding.

There has been some feeling that the market reports in themselves have been a contributing factor in low broiler prices. At a recent conference with U.S. Department of Agriculture officials, auction managers said that too frequently the prices quoted by USDA were actually the offering price of processors rather than the selling price of the contractors.

USDA market reports stated shortly after the opening of the Gainesville auction that when the volume handled was sufficient to reflect true trends the reports would probably be based entirely on the auction prices.

At that time it was pointed out that any efforts to revise the system of market reporting would probably have to start within the broiler industry itself, and it was indicated then that USDA would be willing to cooperate fully with the industry as far as possible.

A few years ago, there was agitation in some of the southeastern broiler areas that the market reporting did not reflect true market conditions. It was said then that too few calls were made to determine accurately what prices were being offered and what prices were being paid.

As a direct result, the Atlanta office revised the report to show or report the actual percentage or number of birds sold at varying prices. With the elimination of the vague "mostly" price, the broiler producer had a far more accurate picture of market conditions.

Some expressed the opinion that a price as quoted by a processor was more of a bookkeeping item since he either owned or contracted for the

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TWO CHICKENS FOR A PENNY?

NEW YORK — A price war on chickens between Brooklyn markets has resulted in a declaration by officials of Germain Stores, Inc., that they are ready to go down to "two for a penny."

The Brooklyn markets recently lowered their prices to 10¢ lb., less than a third of the normal price, and sold birds by the thousands. Germain Stores said it expected to sell 35,000 birds a day. Key Food Stores, across the street, offered a free chicken with each $10 purchase.

The "war" reportedly started when the Key store offered chickens at 29¢ lb., a drop of 4¢ from the normal price.

True D. Morse Makes Stilbestrol Statement

WASHINGTON—A special statement was issued last week by the U.S. Department of Agriculture to assure the public of the safety of eating chicken.

In response to inquiries concerning the situation involving stilbestrol-treated birds, True D. Morse, acting secretary of agriculture, made the following comments:

1. Approximately 99% of the nation's chickens have never received the drug diethylstilbestrol, and none will be receiving it now that the Department of Health, Education and Welfare has banned its use for poultry.

2. Diethylstilbestrol is used only on young chickens that are raised to be sold as caponettes. Since the cost of the drug, the additional labor and the longer growing period are added costs to the producer, it is only used to produce a product for a premium-price market.

3. Capons should not be confused with caponettes. Capons are surgically unsexed birds which have not been treated with diethylstilbestrol. Caponettes were treated with diethylstilbestrol to give them similar characteristics.

4. Consumers can continue to buy regular broilers, fryers, roasting chickens and capons with the knowledge that they have not been treated with diethylstilbestrol.

A. Flemming Criticized By Arkansas Group

LITTLE ROCK, ARK. — The Arkansas Poultry Federation has taken action in an attempt to assure consumers that Arkansas produced poultry and poultry products are safe for consumption.

The federation's board of directors issued a statement criticizing Arthur S. Flemming, secretary of health, education and welfare, for his voluntary program to remove from the market birds treated with stilbestrol.

The statement said Mr. Flemming has "used his office to gain personal publicity at the expense of consumers, other federal agencies, producers and an industry that is a vital part of our economy."

Noting that only caponettes were given the drug, the statement said, "Since Secretary Flemming's announcment, no caponettes have been marketed in Arkansas. All Arkansas poultry shipped in interstate commerce is inspected for wholesomeness at the source by the U.S. Department of Agriculture."

A federation spokesman said Mr. Flemming's action affected only a small part of the poultry industry in Arkansas and that stilbestrol was not used in growing broilers.

Feed Manufacturers Explain Hormone Use

KANSAS CITY, MO.—The Midwest Feed Manufacturers Assn. last week issued a special statement pointing out that stilbestrol is not used in poultry feeds.

Maurice Johnson, president of the association and executive vice president of the Professional Feeds division, Spencer Kellogg & Sons, Inc., released this statement to the press, radio and TV:

"No one need be alarmed at the release by Arthur S. Flemming, secretary of health, education and welfare, regarding the feeding of stilbestrol to poultry. There is no authorization for feed manufacturers to use stilbestrol in poultry feeds and never has been. To our knowledge, no feed manufacturer ever has used it in this way."

500,000 Connecticut Birds Get Stilbestrol

HARTFORD, CONN. — Stilbestrol is used on half a million caponettes a year in Connecticut, according to Joseph N. Gill, state commissioner of agriculture, conservation and natural resources.

Mr. Gill's statement came as a result of action by Arthur S. Flemming, secretary of health, education and welfare, to halt the use of the hormone in poultry.

Mr. Gill said the 500,000 caponettes treated with stilbestrol in Connecticut annually represent about 7% of the state's total broiler production. He said the Connecticut broiler industry is a $20 million annual business.

The local caponettes are mainly grown in New London County, plus some in Windham County, he explained. Most of the birds in question have been sold in the New York specialty trade, he said.

Few Hormone-Treated Chickens in Maryland

BALTIMORE, MD. — Practically none of Maryland's poultry growers implant chickens with sex hormones, according to large poultry growers along the eastern shore and agricultural extension offices of both Maryland and Delaware universities.

According to reports available, practically none of the Delmarva peninsula growers caponize chickens. Maryland's Delmarva market concentrates mainly on the 2½-3 lb. broilers.

Procedures for Selling Caponettes To USDA Related

WASHINGTON—The U.S. Department of Agriculture announced procedures to be followed by those planning to sell caponettes to USDA under the program announced Dec. 10. A caponette is a young bird which has been treated with diethylstilbestrol.

Producers having live birds on hand which have been treated may:

(1) Sell these birds to a processor or

(2) If they desire to offer them directly to the department, have them first processed for their own account. Such birds should be processed in an official plant operating under the Poultry Products Inspection Act. Liver and kidneys should be removed. The birds then should be frozen unwrapped and dry packed in shipping containers. Purchase price to producers for caponettes slaughtered will be related to officially published market prices issued by USDA for a representative period prior to Dec. 10.

Poultry processors, wholesalers and retailers who intend to offer caponettes for sale to the department should take the following steps:

(1) Assemble the product and arrange for its proper protection in freezer storage.

(2) Assemble detailed information as follows:

a. Description of commodity including total weights and number of units (boxes, head, or both).

b. Freezer storage data—name, location of storage plant, into storage date and published rates.

c. Proof of treatment with diethylstilbestrol or description of official caponette label including brand name and approved plant number.

d. Proof of cost to support offering price.

All persons intending to offer caponettes for sale to the department should notify the poultry division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington 25, D.C., of such intention and indicate approximate quantities and storage location and the name and address of person to whom USDA should send the necessary contract forms containing detailed terms and conditions of purchase.

Indiana Poultrymen Remove Treated Birds

LAFAYETTE, IND.—Indiana poultry industry members are cooperating with federal officials in the removal of a very limited number of special type birds from market, according to Robert L. Hogue, executive secretary, Indiana State Poultry Assn., Inc.

Indiana annually produces approximately 50 million broiler-fryer type birds for year round consumption. This type of bird is not normally treated with stilbestrol, he said.

Mr. Hogue stated that less then ½% of the farms having poultry produce the type of bird for special markets referred to in the recent release made by Arthur S. Flemming, secretary of health, education and welfare.

Quality Standards

MINNEAPOLIS—Members of the Minnesota organization of the National Renderers Assn. met recently at the Normandy Hotel here to discuss quality standards of animal proteins.

Officials of the group said they are planning future meetings, at which time they will invite representatives of the national association and of feed manufacturers in the area to discuss mutual problems.

Cites Problem of Failure to Withdraw Medicated Feeds

CHICAGO — The Food and Drug Administration commissioner this week called attention to the problem of failure to follow labeling directions on pre-marketing withdrawal of certain medicated feeds.

Speaking at the American Farm Bureau Federation convention in Chicago, George P. Larrick said "limited investigations" have shown cases of poultry and swine producers not following instructions not to market an animal for a certain number of days after use of medicated feeds.

Mr. Larrick said more adequate facilities are needed for enforcement of rules.

The comments in Chicago on the medicated feed withdrawal problem follow other recent expressions of concern with this problem.

For example, an American Feed Manufacturers Assn. and Animal Health Institute statement last week emphasized the admonitions regarding adherence to federal and state regulations governing removal of certain medicaments prior to slaughter of livestock and poultry (Feedstuffs, Dec. 12). State control officials also have issued warnings on this recently.

Penicillin Residue

In his Chicago talk, Mr. Larrick also noted that FDA will be concentrating more on the problem of penicillin residue in milk. He said that despite strong efforts by FDA in this direction in the past, there still are many instances of penicillin in market milk. Pesticide residues also were mentioned.

It was noted that FDA can only operate when milk enters interstate commerce, and state and industry policing will be urged in intrastate shipments.

The problem results from failure to discard milk from penicillin-treated animals for the proper time following treatment.

Stilbestrol Problems

Mr. Larrick commented, too, on the recent problems and questions in connection with the use of stilbestrol. He pointed out that no residue has been found in beef or mutton from implants or feeding of the hormone product.

The commissioner went on to note that, because of legal provisions, FDA finds itself granting permission for implanting in animal ears while at the same time turning down new applications for use of stilbestrol in cattle feed. He explained that the Delaney amendment mentions only addition to food (for animal or man) and says nothing about implants. Since there is no residue in beef from implants, this method of administering the drug is not covered. Mr. Larrick said the agency plans to check with Congress on certain refinements of the Delaney provision. (Also see story on page 1.)

Iowa Poultrymen Told To End Stilbestrol Use

DES MOINES, IOWA—Poultry dealers and sellers of Iowa have been notified by Clyde Spry, state secretary of agriculture, to comply with the federal request to cease using stilbestrol to fatten chickens.

He stated he believed stilbestrol had been used little if any in the state for chickens. He said Iowa farmers do not raise chickens of that type.

Earl E. Mason, Webster City, secretary of the North Central States Institute, a poultry trade association, said stilbestrol hasn't been used in this area in years.

Feeder Cattle Prices Continue to Decline

LAFAYETTE, IND.—The continued decline in feeder cattle prices has highlighted the farm market picture in recent weeks, points out M. Paul Mitchell, Purdue University agricultural economist. Prices of practically all grades of stockers and feeders have continued to lose ground.

Kansas City, usually considered a key stocker and feeder market for the Corn Belt, has reported prices as low as $27 on choice steer calves. Quotations of $33 in early September and up to $36 in May prevailed at Kansas City.

Yearling feeder steers, heifer calves and other grades of feeders for the most part have shown declines of from $5 to $7.

Several factors had a bearing on this price trend, Mr. Mitchell adds. In the first place, cattle feeders have shown considerable conservatism about next year's price level for fed cattle. With increases of 8-9 million head of cattle on farms during the last two years, larger marketings of cattle are expected in 1960, with prices depressed accordingly. Profits from feeding operations during the last year have, on the average, been quite moderate, with finished cattle selling below the cost of the feeders going into feed lots.

In the second place, after weakness developed both in the feeder market and the fat market, there seemed to be definite advantages in waiting out the market to take advantage of lowest possible prices. There also developed a changed attitude on the part of western ranchers—a realization that this year's prices might be the best that they will be able to get for awhile. The earlier than usual winter weather conditions also served to increase the movement of feeder cattle out of producing areas.

At any rate, early December found a level of feeder cattle prices which should prove attractive to cattle feeders with adequate supplies of feed and the know-how for managing feedlots. Feeder prices have fallen to the lowest levels in almost two years.

Broiler, Egg-Type Chick Hatch Down During November

WASHINGTON — The number of broiler-type and egg-type chicks hatched during November by commercial hatcheries was down from November, 1958, the U.S. Department of Agriculture reported.

The number of broiler-type chicks hatched was down 4% from the previous year, with the number of egg-type chicks off 17%.

Indications are for a smaller hatch than the previous year in December also. The numbers of chicken eggs in incubators Dec. 1 were down 5% on broiler-type and off 25% on egg-type from Dec. 1, 1958.

Production of broiler-type chicks during November totaled 128,727,000, compared with 133,650,000 in November, 1958. The number produced during the 11 months of 1959—January through November — totaled 1,676,553,000, about the same number as produced during these months in 1958.

Egg-type chicks hatched in November totaled 13,473,000, compared with 16,248,000 in November, 1958. Production January through November totaled 532,001,000 — 8% less than during the same period in 1958.

FIRM INCORPORATES

SAN JOSE, CAL. — The Isaacson Grain Co., after 45 years as a partnership, now is being incorporated with capital authorized at $200,000. M. R. Isaacson, the second generation owner of the firm, is president, and his son, Gerald R., is vice president.

Egg Pricing, Credit Troubles Bring Out Problem-Solving Ideas at N. E. Meeting

NEW YORK — Egg pricing and credit's influence on production were talked about like the flirtatious girl down the street when some 150 representatives for the poultry industry got together Dec. 3-4 here in the Hotel New Yorker for a two-day conclave. The meeting was sponsored by the Northeastern Poultry Producers Council (NEPPCO) and the American Poultry & Hatchery Federation.

There was no gossip over the back fence, though. Discussions presented indicated:

- It's time for industry to assume greater responsibility in matters of credit and over-expansion, and
- It's time to realize that the present central egg market system of quoting prices is out-of-date and it needs a replacement.

The credit discussion included a feed manufacturer's proposal for a "national credit code."

Egg Pricing

"Who makes egg prices?" was the question tackled on the opening day by Gordon Urner, Urner-Barry Co., New York price reporting firm; Dr. Norris Pritchard, U.S. Department of Agriculture marketing researcher; Berwyn Gehgan, manager, Northeastern Poultry Cooperative Assn., and Claude W. Gifford, associate editor, Farm Journal, Philadelphia.

Mr. Gifford charged the New York price with not giving "the farmer a fair shake because the price is made on a market that has one of the highest farm-to-retail price spreads in the country." He said only a piddling amount of national egg supplies clear through New York, yet prices set there are used as a yardstick for farmer payment throughout the nation.

Mr. Gehgan and Mr. Urner explained the mechanism and said that the apparently small volumes traded actually do reflect the opinions of buyers and sellers of large quantities, but both agreed that greater participation in exchange operations is a vital necessity.

"Central Markets Dying"

Conclusion which Mr. Gifford drew from his study of the New York egg markets for an article in the magazine include these:

- Central egg markets are dying. Only the New York and Chicago centers still survive feebly enough to be called central markets.
- A new era of direct egg marketing out in the country has taken over. This era is built on the rise of the chain store, demand for egg quality and the increasing influence of integration.
- The antiquated central market system is still carrying on a pricing function which the egg trade left to it by default.

After he described the daily activities of a market reporter, Mr. Urner of Urner-Barry declared that, except for some isolated instances, egg supply and demand conditions in the New York market area are very closely representative of market conditions in other commercially-important areas of the nation and in other key terminal markets.

"No major point of consuming distribution, under existing highly efficient and rapid transportation facilities, can long remain out of line, price-wise, with any other," he said.

"Some temporary factors can distort this relationship," he said. "But in the long run, egg price levels at New York City and elsewhere move up or down or hold stability—and tend to average out at normal differentials—in response to the over-all influences of the total supply and total demand forces present on a country-wide basis."

Quote Pricing Criticized

Dr. Pritchard, marketing researcher, U.S. Department of Agriculture, said the continued use by much of the egg trade of an antiquated sys-

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Antibiotic Potentiation Described as Major Feeding Development

NEW YORK—The potentiation of antibiotics has been called "a development in the manufacture of rations for poultry and livestock which ranks in significance with the original introduction of antibiotics to the feed industry."

A discussion of potentiation of Aureomycin chlortetracycline highlighted the 10th Animal Feed Symposium sponsored recently by the agricultural division of American Cyanamid Co., New York.

"The values of Aureomycin in feeds are greatly increased by controlling the amounts of bone meal, limestone and similar components of feed materials," said Dr. J. S. Kiser of Cyanamid's agricultural research staff.

"The activity of Aureomycin can be doubled by adjusting the quantity of calcium in rations."

The result, according to other scientists at the meeting, is that poultry and livestock farmers can make more weight gains from less feed.

Dairy Cattle Studies

Also on the symposium program was a report covering antibiotic studies with dairy cattle by Dr. Charles A. Lassiter of Michigan State University and Dr. A. Louis Shor of Cyanamid.

They reported studies showing that a daily feeding of a cent's worth of Aureomycin would increase milk production an average of .8 lb. per cow. "In other words," it was said, "a dairy farmer with 25 cows would receive an extra dollar of milk a day for 25¢ worth of feed prepared with Aureomycin."

The symposium was held during November in three locations across the U.S. for research and technical representatives of feed manufacturing companies from the north, southeast, middle west and western states.

Dr. J. T. Thurston, manager of research and development, said this year's and future symposia are part of the company's program "to keep the feed industry informed of the latest research developments pertaining to poultry and livestock nutrition."

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Chicago Board Protests Changes In Tariff Rates

CHICAGO—A stiff protest against contemplated changes in the current eastern domestic grain rate tariffs has been lodged by Clarence Rowland, chairman of the board, and Robert C. Liebenow, president of the Chicago Board of Trade, with the presidents of 19 different railroads over whose lines grain moves into and out of Chicago.

The railroad companies whose rate structure would be affected if the revisions become effective are: Chicago, Burlington & Quincy; Chicago, Rock Island & Pacific; Chicago, Milwaukee, St. Paul and Pacific; Chicago & North Western; Santa Fe; Illinois Central; Soo Line; Wabash, Gulf, Mobile & Ohio; Chicago Great Western; Chesapeake & Ohio; Chicago & Eastern Illinois; Nickle Plate; Baltimore & Ohio; Pennsylvania; New York Central; Erie; Monon, and Grand Trunk.

Boiled down to its essentials, the protest says that from the best information currently available the contemplated revisions will exert a "completely devastating" impact, not only upon the Chicago grain market, but likewise upon the entire grain business.

It goes on to say that in view of the anticipated sharp reductions on grain shipments from the country to territory east of here, but with no compensating changes in the Chicago proportional rate, this constitutes unlawful discrimination. Complete cancellation of other proportional rates is apparently contemplated, says the board of trade protest, and this will produce variable transportation costs east of here, thereby ruining the grain futures market upon which all segments of the grain industry depend.

This in turn, the board of trade officials argue, will naturally disrupt historical relationships between commodities and their origins and definitely earmark all grain for the East, far beyond the latter's ability to consume it.

Broiler Egg Set Shows Sharp Gain

SALISBURY, MD.—Good prices for chickens have caused interest among the nation's broiler chick hatcheries. The egg set has jumped by leaps and bounds.

Delmarva farmers received an average of 19.94¢ lb. last week, compared with 17.45¢ the week before.

A year ago the price was 15.08¢. The main reason for the increased price is the shortage of broilers. Marketings last week here totaled 2,649,000, 14% less than the previous week, and the week's offerings were 33% below the corresponding week a year ago.

Reflecting Better Prices

Last week the 22 important broiler producing areas set 42,469,000 eggs. This was a 23% increase over the previous week. However, it was still 4% less than the corresponding week a year ago. Settings were up from the previous week in all of the 22 states, with sharpest increases reported in Georgia, North Carolina, Virginia, Arkansas and Texas.

Chick placements in the 22 states totaled 28,725,000. This was slightly above the previous week but 4% below the corresponding week a year ago. Increases were reported in 11 states compared to the previous week, with largest increases occurring in Pennsylvania, Maryland, North Carolina and Georgia.

BROILER DEMAND

(Continued from page 1)

showed a decline of 19%, comparing the week ended Dec. 16 with the previous week.

An indication of the holiday slump for broilers was a report from Georgia that the poultry exchange price was down 2¢ from last week to 17¢ lb.

Delmarva

Offerings continued on the limited side in Delmarva and demand was good for live birds this week. Ready-to-cook movement was very light, resulting in some plants not operating. Broiler prices in the East were at a high of about 20¢ and mostly at 18¢, which is pretty much the same level as last week's.

It could be that Santa Claus is more to blame than last week's stilbestrol announcement for any leveling off in broiler prices. But in most conversations, what holiday demand for turkeys does to the broiler business was playing second fiddle to speculation of the possible price damage caused by the ban on commercial distribution of caponettes treated with stilbestrol.

It was reported from Atlanta that demand for broilers in southern cities doesn't seem to have been affected much, but movement to northern cities apparently slowed or stopped. Reports of many cancellations indicate that distributors were afraid they would be caught with too many birds on hand.

Reasons for Slowing

Three developments reported to be responsible for slower movement of southern broilers are:

1. With Christmas just about here, most retailers are featuring turkeys and other meats.

2. There has been some resistance to broiler-buying because of recent retail price increases.

3. The stilbestrol announcement by Secretary Flemming moved the Christmas slump period up a week.

Some believe that it will be the week after Christmas before the broiler picture will be in proper focus for study. But it is reported there is a movement under way in a southern area to get the government to step up its export program immediately to bring the market back up.

"Not Alarmed"

Gene George, president of the Arkansas Turkey Federation, said he was not alarmed at Secretary Flemming's announcement. And he added that he did not believe the statement would have much effect on the Arkansas poultry market. "I don't believe housewives will cease purchasing poultry or poultry products," he said.

Feed manufacturers in the Ft. Worth, Texas, area noted that stilbestrol has been used for artificial caponizing of poultry for years and that no harmful results have been traced to its use. And they expressed gratification that the administration had apparently cleared the drug for use in fattening of beef and lambs.

Otis G. Esham, one of Delmarva's major broiler producers, said stilbestrol hasn't been in general use on the peninsula for several years.

Dr. Lester Greene, Delmarva poultry pathologist, commented: "It has been so long since I have seen a caponette I can't remember when it was."

Mr. Flemming Criticized

Secretary Flemming apparently didn't improve his popularity in some agricultural circles by adding the poultry announcement to the earlier one on cranberries.

Charles B. Shuman, president, American Farm Bureau Federation, charged Mr. Flemming with handling the cranberry and poultry cases in a manner designed to advance himself politically. At a news conference in Chicago, Mr. Shuman said abuses in the use of chemical in food production are inexcusable, but it is unfair in the process of safeguarding food to make administrative moves which damage producers who have not violated health standards.

"He (Secretary Flemming) has ample authority to safeguard the food supply," Mr. Shuman said. "But now he calls meetings of producers, processors and others and tells them if they don't do as he says, he'll blast them in press conferences."

Mr. Shuman added he would like to see "very severe" standards established to prohibit abuses in the use of chemical in food crops and said he hopes Congress will change the law to put Mr. Flemming "out of the business of scaring people and make him more responsible."

Tom Hodge, manager of the poultry auction at Gainesville, Ga., said Mr. Flemming's announcement may have hurt the consumer's acceptance of poultry in general because it was not made clear that the ban involved caponettes only.

Associations Busy

Poultry industry associations were busy doing what they could to explain to the consumer that she can continue to buy chicken with full confidence in its being wholesome and safe.

Donald J. Corbett, president, National Broiler Council, said this week that a nationwide survey of processors and retailers by NBC shows that all caponettes treated with stilbestrol have been removed from distribution.

Harold M. Williams, president, Institute of American Poultry Industries, announced that the institute has urged poultry processors and handlers to cooperate fully in withholding from commercial distribution the small percentage of poultry which has received treatment with stilbestrol while being grown.

Lloyd H. Geil, general manager, Poultry & Egg National Board, Chicago, said the less than 1% treated with the drug "can be identified by the retailer who has agreed to remove it from the meat counters for sale to USDA to provide relief to the poultry producers and handlers for the difficult inventory position in which they suddenly find themselves."

FREIGHT RATES

(Continued from page 1)

good results had been obtained when New England governors made personal appearances in the nation's capital to seek relief on problems of textile manufacturers and egg producers.

The governor told the 250 New Hampshire poultrymen that the "direct action, dramatic approach" might well be used to begin the break-up of the federal subsidy payment plan, which, he said, "keeps the farmers' grain bills high in this period of extremely low returns on poultry products." Too many producers are being driven out of business, he declared.

CHICKEN

(Continued from page 1)

White House gave the green light to Secretary Flemming's decision, Mr. Morse agreed that USDA would take over the banned production under use of Section 32 funds.

Disposal Plans Pending

Up to Dec. 18 at least, there was no final decision of avenues of disposal of such take-over of the banned FDA caponette production, although it is asserted that the alleged contamination only concerns the skin, liver and kidneys of these birds. Reliable USDA sources say that they contemplate re-offering stocks in the hands of producers, processors and the storage trade and distributors for canning after the allegedly contaminated parts have been removed.

Although USDA had not yet announced its payments for the take-over of such stocks, it was suspected that it may agree to buy from retail distributive channels such condemned stocks at approximately the invoice cost. In the case of the producer, they may buy condemned types of birds at a fair price which existed before Dec. 10, 1959, and the same types of price figuring would apply to storage stocks.

MILLFEED

(Continued from page 1)

ahead this week. There was some influence in this direction also from flour mills slowing down production because of the holiday season.

At Minneapolis, from Dec. 10 to Dec. 17 standard middlings jumped $5 to $43.50 ton, sacked. Bran was stronger by $2@2.50 and red dog gained $5.

The millfeed market has been operating like a teeter-totter for several months. One week it's down and the next it's up.

There was rather marked activity in the trade early this week and offerings were scarce. Some interest was shown as far ahead as January.

Feed manufacturers were reported the best buyers of millfeeds during the week as they prepared for the holiday period ahead. An observer of the U.S. Department of Agriculture said the combination of mixer buying and a fair interest for the sacked feed was enough to absorb offerings, and there was not much in the way of excess supplies at the close of the week.

U.S. production of millfeeds, at 99,700 tons this week, was large, but slightly under the 102,000 tons produced the week before.

Other Advances

Soybean oil meal made advances of $2@2.50, primarily on reports of curtailed operations by various producers. But there are some observers in the trade who didn't know whether there would be enough demand to sustain the rise even though production has been curtailed.

Tankage and meat and bone meal gained strength on better demand.

Average Bulk Prices and Index of Weighted Prices*
(Dollars per ton)

	Dec. 15, 1959	Dec. 8, 1959	Change from Previous week
OILSEED MEALS			
Prices at prin. mkts.:			
Soybean meal	68.05	65.65	+2.40
Cottonseed meal	67.85	67.80	+ .05
Linseed meal	78.40	77.50	+ .90
Copra cake or meal	73.00	73.00	...
Peanut meal	65.00	63.00	+2.00
Index	89.6	87.5	+2.1
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts.:			
Meat meal	69.70	69.05	+ .65
Tankage	67.50	66.50	+1.00
Fish meal	113.50	113.50	...
Index	68.8	68.4	+ .4
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts.:			
Gluten feed and meal	47.40	46.80	+ .80
Dist. dried grains	57.85	57.85	...
Brewers dried grains	50.55	50.15	+ .40
Index	77.4	76.4	+1.0
WHEAT MILLFEEDS			
Prices at prin. mkts.:			
Bran	40.80	40.00	+ .80
Midds. and shorts	41.90	40.80	+1.10
Index	74.7	73.0	+1.7
OTHER MILLFEEDS			
Prices at prin. mkts.:			
Hominy feed	45.40	45.50	— .10
Rice bran	33.00	32.50	+ .50
Index	69.8	69.8	...
ALFALFA MEAL			
Prices at prin. mkts.	57.20	57.30	— .10
Index	110.1	110.3	— .2
MOLASSES, FEEDING			
Prices at prin. mkts.	23.05	23.05	...
Index	68.6	68.6	...
ALL FEEDSTUFFS			
Index	82.0	80.5	+1.5
FEED GRAINS			
Prices at prin. mkts.:			
Corn	38.40	38.10	+ .30
Oats	48.70	48.85	— .15
Barley	43.50	43.60	— .10
Grain sorghums	36.80	36.20	+ .60
Index	63.6	63.3	+ .3

*Base period of index is 1947-49.
Source: Agricultural Marketing Service, USDA.

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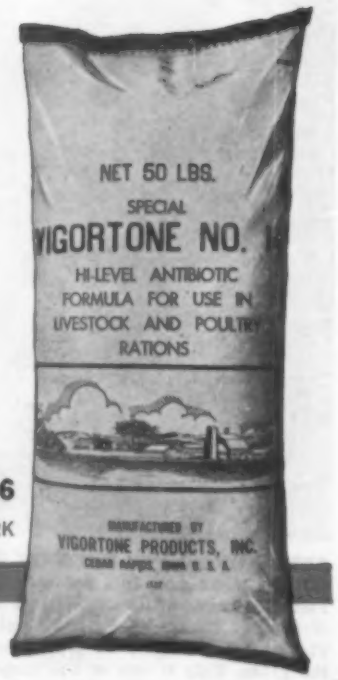

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Summaries of Swine Nutrition Papers Presented At American Society of Animal Production Meeting

Summarized by Dr. T. W. Perry
Purdue University

EDITOR'S NOTE: Summarized here are selected swine nutrition papers presented at the annual meeting of the American Society of Animal Production Nov. 27-28 in Chicago. The author, Dr. T. W. Perry, is professor of animal science at Purdue University, Lafayette, Ind. Summaries of beef cattle and sheep nutrition papers appeared in Feedstuffs Dec. 12.

Antibiotic Supplementation

Oleandomycin, Terramycin and a Combination of Penicillin, Streptomycin and Sulfaquinoxaline for Growing-Finishing Swine—S. A. Griffin, B. A. D'Souza and C. C. Chamberlain, University of Tennessee Agricultural Experiment Station: A variety of antibiotics and combinations of antibiotics were fed, without significant effects on growth rate, to pigs from an initial weight of 46 lb. to a finish weight of 200 lb. on concrete floors. Treatments and respective average daily gains were as follows: control, 1.53 lb.; 10 gm. oxytetracycline (Terram.), 1.59 lb.; 3 gm. oleandomycin (Oleando.), 1.38 lb.; 12.5 gm. sulfaquinoxaline (SQ), 5 gm. penicillin (Pen.) and 12.5 gm. streptomycin (Strep.), 1.54 lb.; 6 gm. Terram., 2 gm. oleando., 1.50 lb.; 5 gm. Terram., 6.25 gm. SQ, 2.5 gm. pen. and 6.25 gm. strep., 1.44 lb.; 2 gm. oleando., 6.25 gm. SQ, 2.5 gm. pen., and 6.25 gm. strep., 1.58 lb. There was no statistically significant difference among treatments in average daily gain or feed requirement per 100 lb. gain.

Effect of Feed Additives on Gain, Feed Efficiency and Carcass Quality of Growing-Finishing Swine—J. H. Conrad, C. E. Jordan and W. M. Beeson, Purdue University: A variety of antibiotics and antibiotic-like substances, alone and in combination, were effective in significantly increasing the rate of gain of growing-finishing swine. Treatments in gm. per ton and respective daily gains are as follows (statistically significant gains are identified by an asterisk): Control, 1.43 lb.; chlortetracycline (aureom.) 5 gm., oxytetracycline (Terram.) 5 gm., penicillin (pen.) 2.5 gm., zinc bacitracin (zinc bac.) 7.5 gm., 1.55* lb.; pen. 5 gm., zinc bac. 15 gm., 1.53* lb.; pen. 3.3 gm., streptomycin sulfate (strep. s.) 8.4 gm., sulfaquinoxaline (SQ) 8.3 gm., 1.62* lb.; arsanilic acid (arsan. a.) 90 gm., 1.54* lb.; 3-nitro-phenylarsonic acid (3-nitro) 22.5 gm., 1.50 lb.; arsenosobenzene 19 gm., 1.37 lb.; piperazine phosphate 400 gm., 1.39 lb.

In a second trial: Control, 1.09; Aureom. 5 gm., Terram. 5 gm., 1.44* lb.; arsan. a. 90 gm., 1.39* lb.; erythromymin thiocyanate 10 gm., 1.51* lb.; oleando. 2 gm., Terram. 8 gm., 1.45* lb.; pen. 5 gm., strep. s. 15 gm., 1.52* lb.; pen. 3.3 gm., strep. s. 8.4 gm., SQ 8.3 gm., 1.54* lb.; spiramycin 20 gm., 1.58 lb.

Effect of Erythromycin in Complete and Free-Choice Rations for Swine—Richard C. Wahlstrom and Eldon W. Juhl, South Dakota Agricultural Experiment Station: The results of three trials are reported in which erythromycin-fed pigs gained significantly faster than their controls and similarly to those fed chlortetracycline. Erythromycin was fed at levels of 5, 10, 25 and 50 gm. per ton of feed, and chlortetracycline at 50 and 100 gm. per ton. Pigs fed the rations with 10 gm. erythromycin per ton gained significantly more rapidly than control pigs and also faster than pigs fed oxytetracycline and chlortetracycline at 10 and 20 gm. per ton, respectively. Chlortetracycline at 100 gm. per ton was superior to erythromycin at 5, 10, 25 or 50 gm. per ton.

Effect of Copper Sulfate and Antibiotics on Growth Rate, Feed Conversion and Fecal Flora of Growing Pigs—J. A. Hawbaker, V. C. Speer, J. D. Jones, V. W. Hays and D. V. Catron, Iowa State University: In the first of four trials, to study the role of copper sulfate in swine nutrition, the following levels of copper sulfate were fed. Respective daily gains are indicated: 0, 1.32 lb.; 0.05%, 1.32 lb.; 0.10%, 1.44 lb.; 0.15%, 1.38 lb.

The second trial was designed to compare the copper radical and the sulfate radical. Treatments and daily gain were: Control, 1.13 lb.; Sodium sulfate, 1.03 lb.; copper chloride, 1.40 lb.

In a third trial, 5.1% copper sulfate was combined with each of the four antifungal antibiotics, nystatin, phytoactin, phytostreptin and rimocidin. The addition of any of these antifungal antibiotics failed to improve pig performance over diets supplemented with only copper sulfate.

The fourth experiment compared 0.1% copper sulfate with the antibiotics oleandomycin (5 mg. per lb.) and oxytetracycline (25 mg. per lb.). Copper sulfate improved rate of gain equally as well as either of the antibiotics. The combination of copper sulfate with either of the antibiotics resulted in an additive effect on rate of gain.

Deep Litter vs. Dry Lot for Growing-Finishing Pigs With and Without Antibiotic Supplementation—E. A. Rutledge and H. S. Teague, Ohio State Agricultural Experiment Station: Results of a two-season study were reported in which the response of pigs to antibiotics on deep litter was compared to that in drylots cleaned daily. The antibiotic treatments consisted of 0, 20 gm. Aureomycin per ton; 10 gm. Aureomycin, 7.5 gm. zinc bacitracin and 2.5 gm. penicillin per ton.

In the first trial, pigs on the deep litter grew at a slower rate than those in dry lot. Both antibiotic treatments improved rate of gain slightly on deep litter. (1.9%) but more so in drylot (12.2% and 6.7%, respectively).

In the second trial, control pigs on the deep litter gained more rapidly than control pigs in drylot.

There was no response to antibiotic on the deep litter, but for the drylot group, 7.9% and 9.2% increased gain was recorded for the two respective antibiotic treatments.

Chlortetracycline Absorption and Calcium Utilization in Growing Swine as Affected by Terephthalic Acid and Calcium Source—R. C. Eggert, W. T. Akers and C. N. Huhtanen, American Cyanamid Co., Pearl River, N.Y.: The results of two experiments designed to study the effect of .5% terephthalic acid (TPA) and .6% tetrasodium ethylene diamine tetracetate (EDTA) on the absorption of chlortetracycline in swine were reported. Also, the effect of source of calcium was studied. Serum chlortetracycline determinations made after seven days on feed showed: An 80% increase due to removal of all supplemental calcium and phosphorus; a 70% increase when $CaSO_4$ and H_2PO_4 replaced ground limestone and dicalcium phosphate; 50% increase due to feeding TPA; 30% increase with the addition of EDTA, but not in rations containing $CaSO_4$ or where supplemental calcium and phosphorus were omitted.

COMMENT ON ANTIBIOTIC SUPPLEMENTATION—The antibiotic story in swine nutrition is quite complex. It appears that newer antibiotics and combinations of antibiotics are more effective. However, it is reasonable to believe that if previously effective antibiotics, which appear to have lost some of their stimulatory effect, are abandoned for a few years they might once again be extremely effective for a time. The mode of action of antibiotics in stimulating growth rate in swine is not very clear.

AERATION POWER UNIT—Ed Trainor, purchasing agent of Douglas Chemical Co., looks over this flat storage aeration power unit, referred to as "The Thing" because of its size. It was designed and produced by the grain aeration division of Douglas for the Wayne Feed and Supply Co., Inc., Taylorville, Ill. The unit is designed to pull over 10,000 cu. ft. of air per minute through the grain. This is one of the largest power units that has been developed by the North Kansas City, Mo., grain sanitation and grain aeration company.

Amino Acid Supplementation

Practical Rations for Swine—Edward E. Bartels, Don E. Boenker and L. F. Tribble, University of Missouri: The results from three trials designed to study the value of amino acid supplementation of swine diets were reported.

Treatments and respective daily gains for weanling pigs up to a weight of 125 lb. are as follows: 13% protein corn-soy basal, .99 lb.; 16% protein corn-soy, 1.32 lb.; 13% basal + .2% lysine, .1% methionine and .03% tryptophane, 1.45 lb.; 13% basal + 7% fat + 3 amino acids, 1.51 lb.; 13% basal + 10% cobs + 3 amino acids, 1.37 lb. From 125 to 200 lb. there was not the marked advantage to the adding of the amino acids (from 10 to 12%) that there was to adding soybean oil meal (33% increase). When a 16% protein corn-soy diet was fed, in a third experiment, amino acid supplemented 13% protein diets did not perform as well as the basal ration.

It would appear that the "point of diminishing return" below which you cannot afford to cut protein for weanling pigs is very near 15-16% on a corn-soy type diet.

Evaluation of Lysine in Practical Swine Rations—N. D. Magruder, W. C. Sherman and W. M. Reynolds, Chas. Pfizer & Co., Inc., Terre Haute, Ind.: Two trials were conducted with baby pigs which showed the value of supplemental L-lysine with conventional starter rations. When added at a level of .1%, lysine caused a 16% increase in rate of gain with a 14% protein basal ration and a 10% increase in gain with a 16% protein basal ration, two times out of four. When fed to growing and finishing swine, .1% supplemental lysine caused lower protein rations to be as valuable as higher protein rations without lysine. Pigs on a 12.5% lowered to 10.5% protein, supplemented with lysine, grew as rapidly as pigs on a 14% lowered to 12% protein ration.

Lysine and Enzyme Supplementation of Corn and Barley Base Diets for Growing-Finishing Swine—H. E. Nielsen, V. W. Hays, V. C. Speer, J. D. Jones and D. V. Catron, Iowa State University: The results of four experiments are reported in which it was shown that supplemental lysine tends to make lower protein rations for swine as effective as a higher level protein ration that has been a more or less accepted standard.

In the first experiment, two levels of protein were compared—14% reduced to 12% vs. 12% reduced to 10% at 125 lb. body weight, with and without supplemental L-lysine at a level of 1 lb. per ton of ration. Pigs on the higher protein gained 28% faster on 10% less feed than those on the lower protein. However, those fed supplemental lysine gained faster than their respective controls.

In another experiment involving three levels of protein, lysine addition improved weight gains on the low protein level. Lysine also improved the performance of a 14% protein barley-soybean meal ration, but not a 14% protein corn-soy ration. Supplemental enzymes also improved feed conversion on the barley-soy diet.

Effect of Lysine-Methionine Supplementation on Growth of Young Pigs Fed a High Energy-Low Protein Diet—P. R. Noland, John Mitchell, Jr., and K. W. Scott, University of Arkansas: A fortified corn-soy-fat 12% protein ration was fed to six-week old pigs. L-lysine additions at levels of 0, .2, .4 and .6% resulted in daily gains of .44, .60, .75 and .66 lb., respectively, with similar improvements in efficiency of feed conversion. In the presence of .2% added methionine, daily gains on the four levels of added lysine were: .66, .74, .61 and .74 lb., respectively. In another test, the addition of .2, .4 or .6% glycine produced gains equal to those pro-

duced by lysine or a combination of lysine and methionine. Lysine addition improved feed efficiency more than glycine. None of the gains or efficiencies approached the performance of pigs fed a 20% protein fortified corn-soy-fat ration.

COMMENT ON AMINO ACID SUPPLEMENTATION — Much new knowledge concerning amino acid supplementation of swine rations has been brought out in research in recent years. When we learn how to supplement swine rations properly and economically with amino acids, it is reasonable to believe we'll have to rewrite the "protein requirements."

Several years ago it was shown at Purdue, for instance, that when a proper balance of pure amino acids was fed to quite young pigs, a level of 11% "protein" produced maximum rate of gain and feed efficiency. However, we will have to rely heavily upon the manufacturer to produce amino acids economically enough that they can be used in practical swine rations.

Poultry feed manufacturers have been using supplemental methionine for many years. It is reasonable to believe that when researchers can show the justification for other amino acids, such as lysine, above, their production on a practical basis will come into being.

Minerals and Trace Minerals

Effect of Source of Protein on the Zinc Requirement of the Growing Pig—W. H. Smith, M. P. Plumlee and W. M. Beeson, Purdue University Agricultural Experiment Station: Even on low zinc diets, parakeratosis was not produced when the supplemental source of protein in the diet of three-week old pigs was from milk. On isolated soybean protein, parakeratosis was produced readily. Protein sources tested and total zinc content, in mg. per kg., were: (1) Isolated soybean protein, 16; (2) soybean oil meal, 22; (3) vitamin free casein, 6; (4) commercial casein, 18; (5) dried skimmilk, 16. Daily gains were .13 lb., .27 lb., .47 lb., .46 lb. and .67 lb. All pigs receiving isolated soybean protein and soybean oil meal developed parakeratosis but there were no symptoms in the pigs fed the milk proteins. Significant increase in growth rate and alleviation of parakeratosis were observed when 50 mg. per kg. of zinc was added to the soybean protein rations but no benefit was obtained by adding zinc to the milk protein rations.

Effect of Variable Calcium Levels With and Without Supplemental Zinc on Growing Swine—J. A. Hoefer, R. W. Luecke, E. R. Miller, D. E. Ullrey, A. M. Pearson and H. D. Ritchie, Michigan State University: Weanling pigs were fed rations containing .3%, .5% and .7% calcium, with and without added zinc at a level of 60 ppm. Parakeratosis occurred in all lots not receiving supplemental zinc. Dermatosis ranged from 40% incidence with mild skin lesions at the .3% Ca level to 90% incidence and very severe lesions at the .7% level. No parakeratosis developed in pigs receiving supplemental zinc. Zinc supplementation improved performance at all calcium levels. However, in each case pig performance on the lower calcium level was superior to the next higher one.

The Effects of Feeding an Autoclaved Diet on the Development of Parakeratosis in Swine—I. D. Smith, R. H. Grummer, W. G. Hoekstra and P. H. Phillips, University of Wisconsin: The heating of a 14% protein corn-soy diet (1.3% Ca, .65% P and 33 ppm. zinc) at 230° F. for one hour (autoclaved) apparently reduced its parakeratotic effect. Such fed pigs gained 75% faster than pigs on a ration of the same composition that had not been autoclaved and the severity and incidence of parakeratosis was decreased.

In another approach to the problem, pigs suffering from parakeratosis showed almost as rapid a recovery as pigs fed the ration supplemented with 100 ppm. zinc. In a zinc balance study, pigs fed the autoclaved diet retained more total zinc and had a lower concentration of zinc in their feces than pigs fed the diet that had not been autoclaved.

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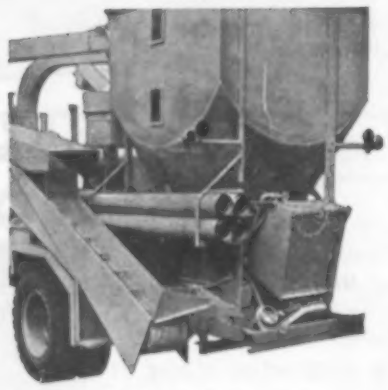

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Meat Scrap Additions to Corn-Soybean Meal Rations for Growing-Finishing Swine—J. H. Conrad, M. P. Plumlee and W. M. Beeson, Purdue University: In the first two phases, trace minerals were added to a 16% protein corn-soy ration. Almost all trace mineral additions improved the ration as indicated by the following daily gains: Control, 1.46; Zn 50 ppm., 1.54; Zn plus Cu 5 ppm., Fe 50 ppm., 1.55; Zn, Cu, Fe plus Mn 20 ppm., 1.60; Zn, Cu, Fe, Mn plus Mg 200 ppm., 1.55; Co 1.3 ppm., Cu 3.6 ppm., I 1.9 ppm., Fe 48 ppm., Mn 61 ppm., Zn 50 ppm., 1.61. Additions of 2% levels of dehydrated alfalfa meal, corn distillers dried solubles, condensed menhaden fish solubles or meat and bone scrap, alone or in combination, did not improve the performance of a corn-soy ration containing Co, Cu, I, Fe, Mn and Zn.

The Effect of Copper and Calcium Levels on the Performance of Growing Swine—John H. Carter, Jr., Russell F. Miller and C. C. Brooks, Virginia Agricultural Experiment Station: Excessive levels of calcium depressed growth rate and the simultaneous addition of copper with the high levels of calcium did not overcome this depression for weanling pigs. The following diets and respective daily gains are: Basal (3 ppm. Cu; .6% Ca; .4% P) 1.39 lb.; basal plus .65% Ca, 1.27 lb.; basal plus 12 ppm. Cu, 1.44 lb.; basal plus 12 ppm. Cu and .65% Ca, 1.28 lb. Bowing of the front and rear legs was prevalent in the pigs fed diets which had not been supplemented with copper.

Potassium Requirement Studies With Pigs Weaned at Two Weeks of Age—A. H. Jensen, D. E. Becker and S. W. Terrill, University of Illinois: Two experiments were designed to determine the potassium level required for two-week old pigs. The cerelose-crude casein diet analyzed .027% and .004% potassium in experiments 1 and 2. Levels of added potassium ranged from 0 to .5%. Pigs on the control ration gained .04 lb. per day, whereas those on an adequate level of potassium (.3%) gained .57 lb. per day. The optimum level of potassium appeared to be .26%. Pigs on the potassium-low control ration evidenced poor appetite, growth and feed efficiency throughout the test period.

Measurement of Phosphorus Utilization by Swine by an Isotope Technique—L. R. Arrington, C. B. Ammerman, George K. Davis, Florida Agricultural Experiment Station: Four sources of phosphorus were compared for their availability for swine by the radioisotope technique. Per cent of phosphorus "absorption" values in per cent of dose for four phosphates tested were: Chloroapatite, 44.5; dicalcium phosphate, 34.5; soft phosphate, 22.4, and natural iron-aluminum phosphate, 7.3. Accumulated percentages of the dose in urine and in the femur of 144 hours were: Chloroapatite, 13.5 and 0.6; dicalcium phosphate, 4 and .54; soft phosphate, 7.5 and .42, and iron-aluminum phosphate, .52 and .02.

Baby Pig Nutrition

The Influence of Ingredients and Processing on the Consumption of Early Creep Feed by the Pig—H. S. Teague and E. A. Rutledge, Ohio Agricultural Experiment Station: In four seasons, 158 litters of pigs were used to determine the influence of various ingredients on the palatability of early creep feed.

A simplified diet containing 66% rolled oats, 33.1% cracked corn, .4% trace mineralized salt, .5% antibiotic supplement and an antioxidant was used as the basal creep feed. Changes in formulation included 4% dried fish solubles, 10% dried skimmilk, 1% ground limestone and 1% steamed bonemeal, 10% lard, 5% molasses, 10% cane or corn sugar, 1 lb. saccharin per ton, 9.14 lb. calcium cyclamate per ton and the cooking or expanding of the basal feed.

Consumption was measured from the 14th to 35th day. Only the substitution of 10% lard, 4% dried fish solubles and 1% each of ground limestone and steamed bonemeal appeared to increase the palatability of the basal ration.

Effect of Artificial Flavors on Palatability of Pig Starter Diets as Measured by Free-Choice Feed Intake—F. Diaz, L. E. Grinstead, V. W. Hays, V. C. Speer and D. V. Catron, Iowa State University: Several variations of a commercial pig flavor compound were tested on two-week old pigs. Saccharin and sodium cyclamate were included in each experimental flavor combination to provide sweetness equivalent to 10% sucrose except for two compounds containing sweetness. The consumption of two of the seven flavored rations predominated from 2-8 weeks of age. However, within the six weeks of the test the pig preference for flavors did change.

Effect of Proteolytic Enzyme Supplementation to Simulated-Milk Diets on Weight Gains and Protein Digestibility in Baby Pigs—J. H. Maner, W. G. Pond and R. S. Lowrey, Cornell University: Baby pigs were used in two growth-digestion trials to study the effects of pepsin and trypsin supplementation to a 28% protein soya-protein simulated milk diet. Enzyme supplementation had no significant effect on protein digestibility or on weight gains. Casein, when compared to soya protein, proved superior in its ability to produce weight gains, and the average casein digestibility was 7.2% higher than the average soya protein quality.

Miscellaneous

Some Effects of Estrogenic, Androgenic and Tranquilizer Compounds on Performance and Carcass Characteristics of Growing-Finishing Swine—D. M. Baird and H. C. McCampbell, Georgia Experiment Station: Three trials were conducted to determine the effect of estrogenic, androgenic and tranquilizer compounds in conjunction with high energy rations for swine. Treatments and average daily gain data for the first trial were: basal, 1.58 lb.; 8% added tallow, 1.58; 3 mg. stilbestrol implant, 1.83 lb.; stilbestrol implant plus .25 lb. hydroxyzine per lb., 1.76. However, the differences were not statistically significant. A second similar trial gave similar non-significant differences. A third test involving androgenic compounds in comparison with stilbestrol and estradiol-progesterone showed no gain differences.

Effects of Stilbestrol and a Combination of Progesterone and Estradiol on Growing-Fattening Swine—B. N. Day, S. E. Zobrisky, L. F. Tribble and J. F. Lasley, University of Missouri: Barrows were used to study the effect of the following hormonal treatments: Control, 6 mg. stilbestrol; 166.7 mg. progesterone and 3.3 mg. estradiol benzoate; 500 mg. progesterone and 10 mg. estradiol benzoate. All hormones were administered as a subcutaneous implant. Differences in rates of gain among treatment groups were not statistically significant. Backfat thickness was significantly reduced by the progesterone-estrogen treatments.

Effect of Feeding Tranquilizers to Growing and Finishing Swine—R. A. Pickett, J. H. Conrad and W. M. Beeson, Purdue University: Two experiments were conducted to study the effect of adding tranquilizers to the ration of weanling pigs. Tranquilizers tested and levels used in the first trial were: Reserpine, 60 mcg. per lb. ration; Rauwolfia vomitoria, 25 mg.; meprobramate, 25 mg.; hydroxyzine, 0.5 mg. and perphenazine, 0.5 mg.

None of the gains were significantly different from the control lot receiving no tranquilizer. In a second trial, trifluomeprazine and tetrahydrozoline were included.

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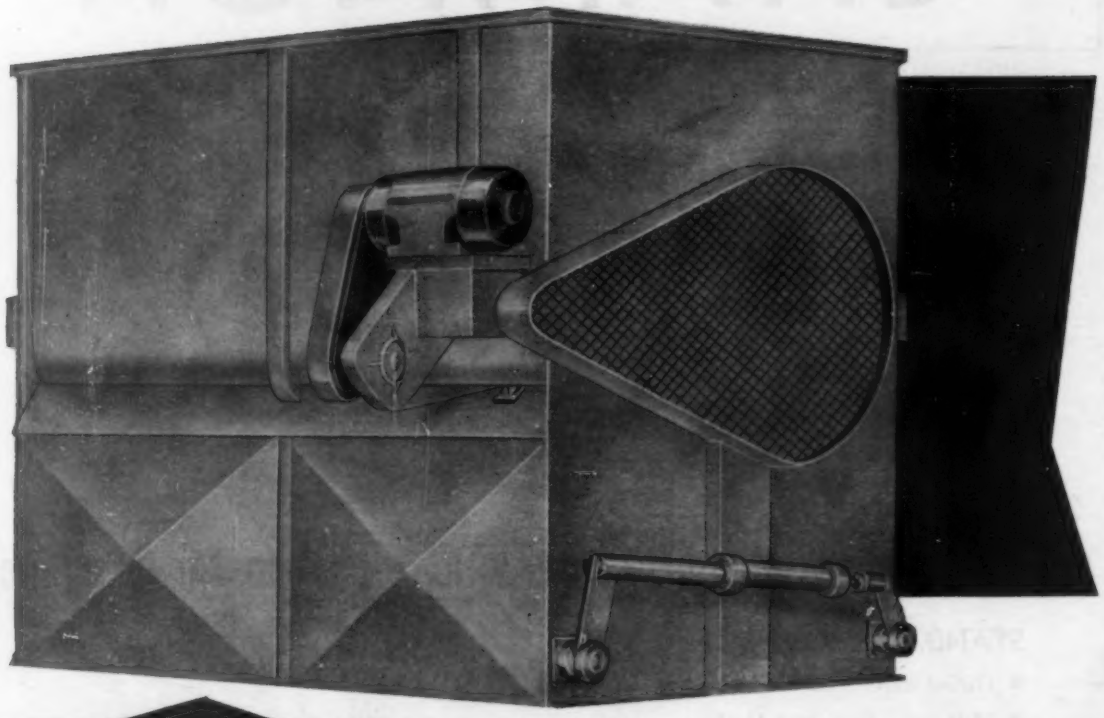

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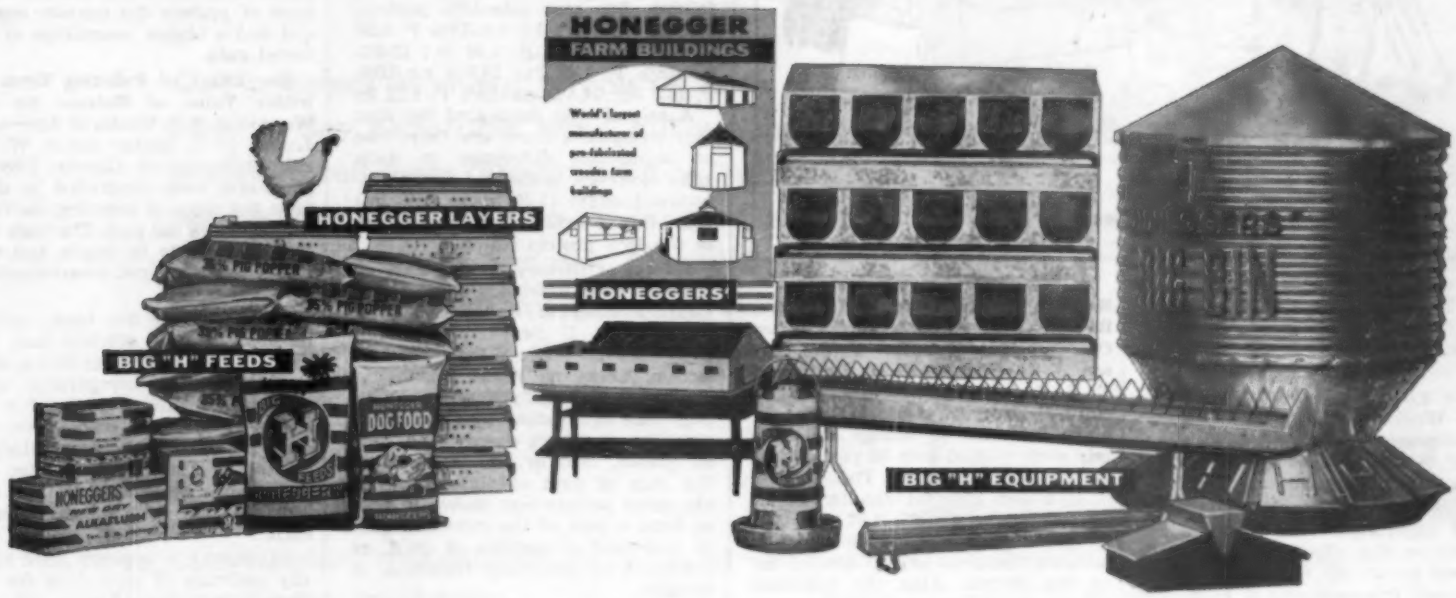

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SALES ASSISTANCE from well trained, enthusiastic district managers produces new business and keeps Honegger dealers inspired. Product specialists, such as building and equipment salesmen, help dealers close big sales.

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was brought about by the tranquilizers tested. In fact, higher levels of the tranquilizers used in the second trial resulted in slower gains.

The Effect of Varied Feed Intake to 8 Weeks of Age on Growth and Development of Pigs to 200 Pounds Body Weight—D. L. Frape, V. W. Hays, V. C. Speer, J. D. Jones and D. V. Catron, Iowa State University:

An experiment was conducted to determine the effects of four levels of feed intake (45, 60, 75 and 90% of full feed) from weaning at 19 days of age until 54 days of age.

At 54 days of age those receiving 45% of full feed weighed half as much as those receiving 90% of full feed. From then on the pigs were fed ad libitum.

No significant effect on carcass characteristics could be correlated with the level of feeding up to 54 days of age. Although 85% of the variation in time to 200 lb. could be attributed to differences in weight at 54 days, it required a difference of 2.7 lb. at 54 days to reduce time to 200 lb. by one day.

The Influence of Energy-Protein Ratio in the Ration on Performance, Ration Digestibility and Carcass Characteristics of Swine—A. J. Clawson, T. N. Blumer, F. H. Smith and E. R. Barrick, North Carolina Agricultural Experiment Station: The dietary variables of energy and protein were studied with 36 pigs weighing 39 lb. at the start. The addition of 0, 5 and 10% fat resulted in increased gains of 1.85, 1.97 and 2.01 lb. per day without any increase in backfat thickness or per cent of fat in the carcass. Also, the following calorie to protein ratio results were obtained: C/P ratio 27—2 lb. per day; C/P ratio 32—1.94 lb.; C/P ratio 41—1.89 lb.

Energy Value of Various Feedstuffs for the Young Pig—B. G. Diggs, D. E. Becker, S. W. Terrill and A. H. Jensen, University of Illinois: A technique was employed to measure the energy value of feedstuffs for swine by feeding each test material in addition to a control mixture formulated to provide adequate amounts of all nutrients except energy. Gross energy and nitrogen determination on the feed, feces and urine were made for all pigs.

The feedstuff and the adjusted metabolizable energy (Calories per gram) are: Corn starch, 3.61; dextrose, 3.26; ground yellow corn, 3.25; ground wheat, 3.08; ground oats, 2.68; rolled oats, 3.47; ground milo, 3.07; wheat bran, 2.18; alfalfa meal, 1.30; corn oil, 7.30; lard, 7.54; stabilized tallow, 7.83; lactose 3.34; dried whey, 2.93; meat and bone scraps (50%), 1.56; menhaden fish meal, 2.70; tankage (60%), 2.07; soybean meal (50%), 3.39.

Effect of High Fiber (Corn Cobs) on Ration Digestibility, Growth Rate, Backfat and Feed Efficiency of Pigs Fed Two Levels of Protein—R. S. Lowrey, W. G. Pond and J. H. Maner, Cornell University: The incorporation of from 0 to 24.8% ground corn cobs into a 10% protein ration resulted in decreased rates of gain. However, increasing the level of protein to 18% reduced the severity of depression in gain.

In one trial, daily gains were as follows: 0% corn cobs-10% protein, 1.56 lb. per day; 0% c.c.-18% P, 1.57 lb.; 12.4 c.c.-10% P, 1.36 lb.; 12.4% c.c.-18% P, 1.43 lb.; 24.8% c.c.-10% P, 1.03 lb.; 24.8% c.c.-18% P, 1.22 lb.

A second trial duplicated the first four treatments above and there was no significant difference in daily gain. However, there was significantly less backfat (1.19 in. vs. 1.43 in.) from incorporating 12.4% corn cobs in the 18% protein ration.

Effects of Dietary Animal Fats on Growth, Feed Efficiency and Carcass Characteristics of Swine—D. M. Thrasher, R. E. Brown, A. M. Mullins, Sam L. Hansard, and Paul B. Brown, Louisiana State University: Results from two feeding trials with pigs once again show that the incorporation of a high energy feed such as grease, lard or tallow increases the rate of gain of pigs. However, the same picture was shown in that at least a part of the increased gain is increased deposition of lard as indicated by increased thickness of backfat.

In this experiment, grease, tallow or lard was added at levels of 5 and 10% in both winter and summer rations. Gains were significantly increased and feed efficiency was improved by as much as 21% by the incorporation of the lipids—grease gave no increase in gain in the summer trial.

Possibly there is a growth factor in lipids which might be isolated and fed per se, or perhaps it is just the concentrated energy in lipids that stimulates the rate of gains. However, the increased gains in swine obtained from feeding lipids are undesirable as we understand them today because of the increased deposition of fat in the swine carcass.

Some Effects of Dietary Levels of Alfalfa Meal and Protein, and of Antibiotic Supplementation on Growth, Feed Efficiency and Carcass Characteristics in Swine—J. W. Stevenson, R. J. Davey and R. L. Hiner, Animal Husbandry Research Division, ARS, Agricultural Research Center: Levels of 4, 16 or 18% dehydrated alfalfa meal and of 14-11% and 18-15% protein were fed to swine to determine the effect on growth rate and carcass quality.

When the level of dehy was increased from the basal 4% to 16% or 28% progressive decreases in rate of gain and feed efficiency were obtained and per cent of fat in the carcass was reduced.

In a second experiment, the two levels of protein and the presence or absence of chlortetracycline had no effect on feedlot results, but carcasses from the swine fed the higher level of protein did contain less fat and had a higher percentage of preferred cuts.

The Effect of Pelleting Upon Nutritive Value of Rations for Pigs Weaned at Two Weeks of Age—A. H. Jensen, D. E. Becker and S. W. Terrill, University of Illinois: Five experiments were conducted to determine the value of pelleting the ration for two-week old pigs. The tests were from 4-6 weeks in length and corn-casein, corn-soy and wheat-casein diets were tested.

In four of the five tests, pelleting resulted in more efficient feed utilization. Meal and pellet forms of rations produced comparable gains. Analysis of rations revealed a consistent decrease in crude fiber value after pelleting. Laboratory study indicated the starch in pelleted corn to be more susceptible to malt amylase digestion than starch in regular corn.

In general, it is pretty hard to justify pelleting of corn diets for hogs from a nutritional point of view. Probably there are some mechanical advantages, but the pigs have tended to show us no apparent nutritional advantages. In the case of our more fibrous grains such as barley and oats, there is an apparent nutritional advantage to pelleting rations for swine in which these grains comprise a major part of the carbohydrate portion.

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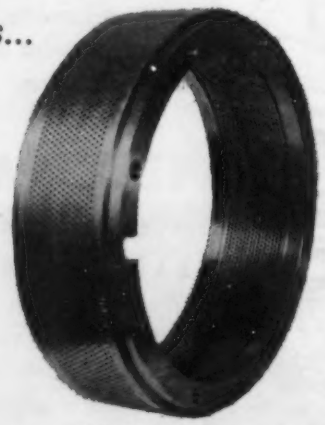
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A CASE HISTORY OF

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A. CUSTOMER PROBLEM—Ozark needed a new dog food brand design.

BEMIS SERVICE SOLUTION—Working from a dog picture favored by the customer, Bemis artists created a strong selling design.

A.

B.

C.

B. CUSTOMER PROBLEM—The Ozark formula has a high fat content, with a tendency to "bleed" through normal multiwall bag construction.

BEMIS SERVICE SOLUTION—Many constructions were tested . . . until the most efficient, economical package was determined—a bag with a special inner ply.

C. CUSTOMER PROBLEM—Due to the excellent product (and maybe partly to the selling package), sales skyrocketed until production ran hopelessly behind (a happy problem, of course). An additional mixer was installed, and then there was a bag-packing bottleneck.

BEMIS SERVICE SOLUTION—A Bemis Packaging Service engineer recommended a Bemis Packer-Ette, with related Bemis Sewing Machine Pedestal and Conveyor. This handled the job perfectly, and the balanced production line is now keeping up with sales. 25-lb. and 50-lb. multiwalls and 5-lb. Flexi-Cartons® (all by Bemis) are flowing steadily from the Packer-Ette.

This case history involved only a few of the many phases of Bemis service. What service would help you? Whatever it is, it's yours for the asking.

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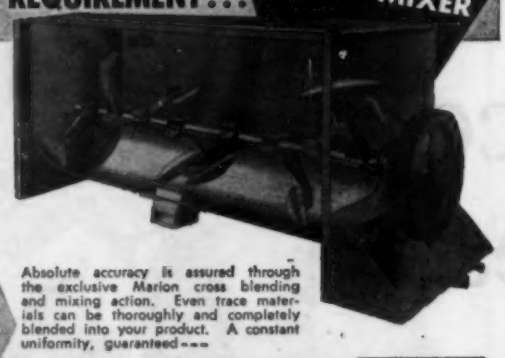

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Credit 'Lesson' Aired at Minnesota Poultry Session

By GEORGE L. GATES and FRED E. TUNKS
Feedstuffs Staff

MINNEAPOLIS — The feed and poultry industries have taken a bad beating in the broiler business, but the experience could lead to some cures for unsound financing.

This opinion was expressed by Robert Scharf, general credit manager of Cargill, Inc., at a three-organization poultry convention Dec. 8-9 at Hotel Radisson.

Mr. Scharf referred to the poultry financial troubles in Georgia and elsewhere as a "blood-letting," which, if continued could provide valuable knowledge of "what are the good and bad deals" in financing.

The convention, a combined gathering of the American Poultry & Hatchery Federation (Midwestern "Quickie"), the Minnesota Poultry Hatchery Assn. and the Minnesota Egg Producers Assn., also featured discussions on the changing picture in poultry production and the problems faced by Midwestern producers in retaining markets for their products.

Use of credit is at an all-time high, and it will go higher, Mr. Scharf predicted. He noted, however, that if credit is handled on a "wild" basis, banks will be forced to put it on a sound basis.

"The charge for money is the hottest topic in business today," the speaker said. "Not only has the prime rate gone up to 5¼%, but deposit requirements also are up. Thus the cost of financing is even higher than the increase in interest rates indicates.

"You can't run a business by lending money at less than cost," he said, pointing out that excessive receivables also take away money needed for investment and for operating other parts of the business.

"What you give out is capital; getting it back is labor," he said. "Farmers have learned that the feed dealers and hatcherymen are the last they should pay."

Urges Comparison

Mr. Scharf urged those present to compare their receivables in November, 1959, with those in the same month of 1958, checking both the amount and the number of days slow. "The comparison," he said, "will astound you."

The speaker pointed out that integration is not credit but rather a new department in a business and must be managed as such. He gave as an example a feed company which is producing turkeys on the basis of furnishing everything needed but the housing and labor and paying the grower 2¢ lb. to grow the birds.

"Our problem, in dealing with credit, is to find out what is sound," Mr. Scharf said. He suggested that lenders follow the bankers' rules: The borrower should have an equity; the borrower should be of good character; both the borrower and lender should understand when and how the loan is to be repaid and steps should be taken to collect when payments are due.

"Troubles develop when we break these rules," he said. "We can't safely get around them."

Reasonable Performance

A panel discussion on "What Is Reasonable Performance in Today's Laying Strain Chickens" was led by Dr. Robert Schoffner, University of Minnesota poultry department. Answers were provided by Dr. Jack Hill, Babcock Poultry Farm, Ithaca, N.Y., and Richard Irwin, president, Colonial Poultry Farms, Pleasant Hill, Mo. These "reasonable performance" figures were brought out:

A grower should expect to house 85 to 90% of a flock.

The maturity of the hen depends on the feeding method, but good performance would be 50% production at 180 to 190 days.

Growers should strive for 250 eggs per year, although strains producing larger eggs generally produce fewer of them.

Eggs from mature birds should weigh 25 to 26 oz. per doz. Larger

(Turn to CREDIT, page 32)

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Implants—How, When?

In a search for answers to the questions of how and when hormone implants should be used in a beef production program, the Nebraska Experiment Station learned:

● It appears that once an animal is given an implant, another implant is necessary to continue its increase in gain.

● If two implants are to be given through a winter-summer fattening program, implants made at the beginning of the latter two phases would be more desirable than implanting at the beginning of the first two phases.

● The beginning of the fattening period appears to be the most desirable time for the implant if only one is to be given.

Reporting the results of tests on hormones and chemical compounds which stimulate growth, Dr. John Matsushima, professor of animal husbandry, University of Nebraska, and L. C. Harris, superintendent, Scotts Bluff Experiment Station, said data indicated that single implanted and reimplanted steers gained 29 to 52 lb. more per head than control animals.

The objective of the experiment discussed by Dr. Matsushima and Mr. Harris in the fall issue of Nebraska Experiment Station Quarterly was to determine the value of single, double and triple hormone implants (Synovex) when each implant was made at the beginning of the wintering phases, summer grazing phase and/or fattening phase.

◆

Air, Water 'Draining'

Air and water "draining" is an important factor for the poultryman to consider in locating a brooder house.

Alex Gordeuk, head, poultry department, Hales & Hunter Co., Chicago, told the 10th annual convention of the Arkansas Poultry Federation held recently at Berryville, Ark., that he could eliminate CRD in turkeys by constructing houses on high points.

Mr. Gordeuk pointed out that poultry houses in valleys may cause disease problems.

"If I had a farm here in the Ozarks," he said, "I would build my houses on the highest ground. You would be surprised how much easier it is to ventilate houses located properly."

◆

Grit for Layers

Layers fed grit produced more eggs and ate less mash than birds on a straight all-mash ration in the 1958-59 New Jersey random sample egg laying test at Rutgers University.

Rutgers reports that grit-fed birds ate an average of 2.16 lb. grit per hen and laid an average of seven more eggs than birds that had no grit. Also, grit-fed birds ate .13 lb. less feed to produce a dozen eggs.

◆

Space for Turkeys

Colorado State University reports that turkeys raised in confinement were 1.2 lb. heavier at 23 weeks of

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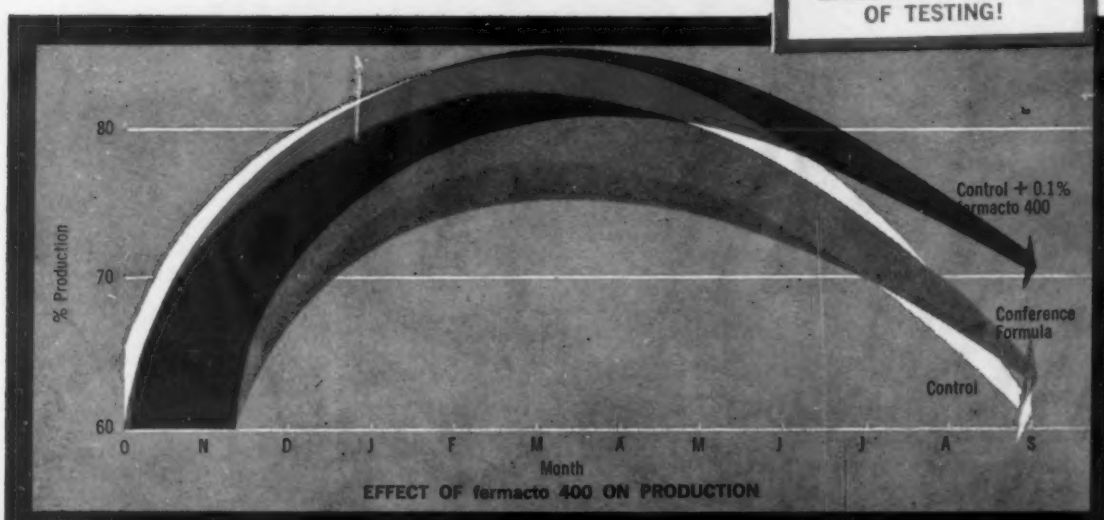
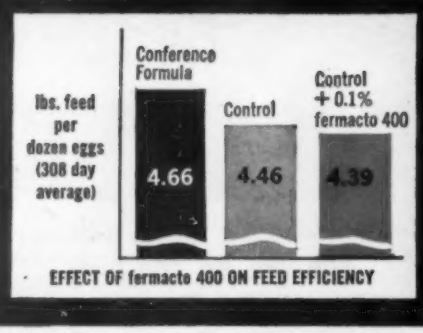


EFFECT OF formacto 400 ON PRODUCTION



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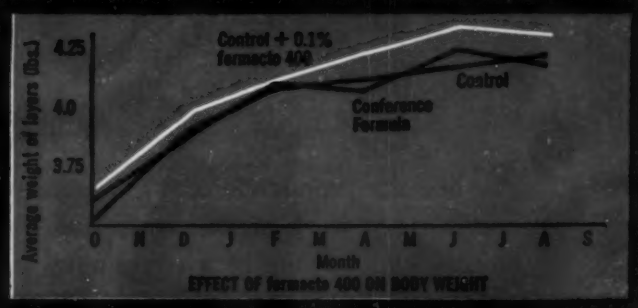

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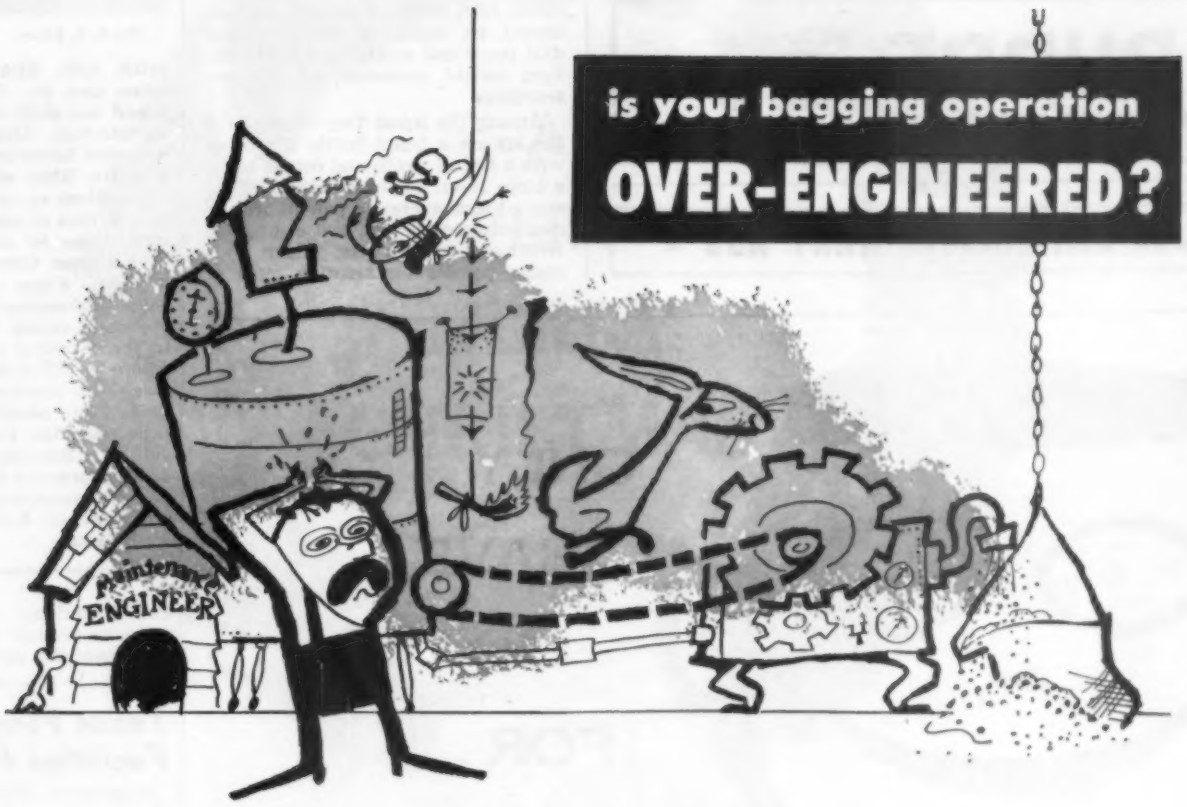

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age when allowed 5 sq. ft. than similar birds given only 3 sq. ft. of space per bird.

◆

Dairy First Aid Kit

A well-stocked dairy first-aid kit containing the most frequently needed medical supplies should be standard equipment in the dairy barn, say dairy researchers at Hess & Clark, Ashland, Ohio.

The kit, made of a low-cost container such as a flat metal lunchbox, should be relatively moisture and dust proof and constructed of sturdy, light weight materials, say the researchers.

Among the items they suggest for the kit are a 1-pint bottle of alcohol with a box of swabs and cotton balls; a large 16-oz. bottle of iodine; a livestock thermometer; a pair of sturdy, medical-type scissors, and a drug for treatment of mastitis; udder ointment; powder for treating pinkeye, ear infections, cuts and surface wounds; product for dehorning and a treatment for calf scours.

Dr. A. E. Kline Dr. J. Bennett

JOIN ASL STAFF — Dr. Arlis E. Kline and Dr. Jack Bennett have joined the staff of the scientific administration division of American Scientific Laboratories, Inc., Madison, Wis. Dr. Kline will conduct field investigations on new products and improved uses of established ASL products. Prior to receiving his D.V.M. degree from Colorado State University, Dr. Kline served as an ASL sales representative in the Rocky Mountain states. Dr. Bennett will be in the technical services department where he will divide his time between diagnostic services and work in the field. After receiving his D.V.M. degree from the University of Minnesota, Dr. Bennett had a general veterinary practice in Minnesota. Later he was associated with the U.S. Department of Agriculture at Crookston, Minn.

Texas Firm Builds Facilities for Dairying

STANTON, TEXAS — Bernard Houston, part owner of a Stanton (Texas) Seed & Chemical Co., has built dairy facilities on his farm and is now leasing them to a dairyman.

Mr. Houston not only sells the concentrates but raises grain and sorghum crops on his irrigated farm. They are converted to silage and sold at regular prices to the dairy manager.

This relationship came into being when the dairyman was buying silage from Mr. Houston and trucking it nearly 30 miles to his dairy. Since the dairyman was leasing his original barns, Mr. Houston decided to build a barn and corrals on his own place and lease them to the dairy operator.

Mr. Houston had about 150 acres of silage crops this year, some of which made 25 tons an acre.

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Computer Formulation Of Feeds Discussed At Nutrition Seminar

ST. PAUL—Advantages of linear programming and computer formulation of feeds were stressed by Jim Smith, applied science representative of IBM Corp., Minneapolis, during the Twin City Nutritional Seminar at the University of Minnesota here recently.

Mr. Smith gave a background on linear programming and other techniques with general reference to the war use of these techniques. He also noted the amount of work that had been done in agricultural economics.

Mr. Smith defined linear programming as "a proven technique to meet all requirements while considering all available variables giving a minimum cost solution."

"This is not a new use of linear programming," Mr. Smith stressed, noting previous uses in blending with a description of gasoline blending (the blending of crude oil to make the various gasolines). Ore blending also was mentioned by Mr. Smith, saying "chemical samples of the ore are taken and thus it can be blended based upon the chemical composition of the ore."

Necessary Data

Mr. Smith pointed out the following data necessary to compute a blend of feed by machine:

"(1) Cost of ingredients. The cost is either a simple cost of ingredients or the necessary additives or a possible complex cost involving the transportation cost to the plant plus the actual cost of the ingredients.

"(2) Nutritional values. These must be in such a form that we are able to state them mathematically.

"(3) Nutritional requirements. The machine should be given all the possibilities just as the nutritionist takes into mind all possibilities when making up a formula.

"(4) Management restrictions. With the two obvious restrictions of plant capacity and preference for given ingredients, these also should be included in order for the machine to give a practical solution.

"(5) Ingredient restrictions. The restrictions of weight, texture, color of the feed as well as the necessity for packing or pelletizing the feed are important."

Mr. Smith then went into a sample problem, giving the types of restrictions that normally would be encountered such as protein, fiber, vitamin A, a restriction on a given ingredient and the total weight restriction. He pointed out also that these restrictions, depending upon the number of ingredients that contribute to one restriction, can be very tight.

"This will in many cases give us a solution, but not necessarily the least-cost solution that could be obtained with slightly less restrictive equations," he noted. "The original array was shown with the analysis of ingredients. A slack and artificial matrix also was displayed to give the nutritionists a feel for some of the terminology which they may encounter in this problem. A cost equation also was shown to enable them to see the basis by which the least-cost formulation was developed.

Pitfalls Can Occur

"Various pitfalls can occur based upon inconsistencies or exact requirements," Mr. Smith said. "In the area of inconsistencies a formula may require, let us say, 4 million units of vitamin A and also require 2 lb. of vitamin A. Two pounds of vitamin A will contain 7,248,000 units and as a result we have two restrictions which cannot possibly be met. In making all requirements exact, we will obtain a solution. It will be the least costly solution for the problem as stated. By slightly changing our restrictions to enable us to include a slight area over which they might range, we may lower the cost considerably—for example, calcium, a lower and upper bound rather than an exact requirement."

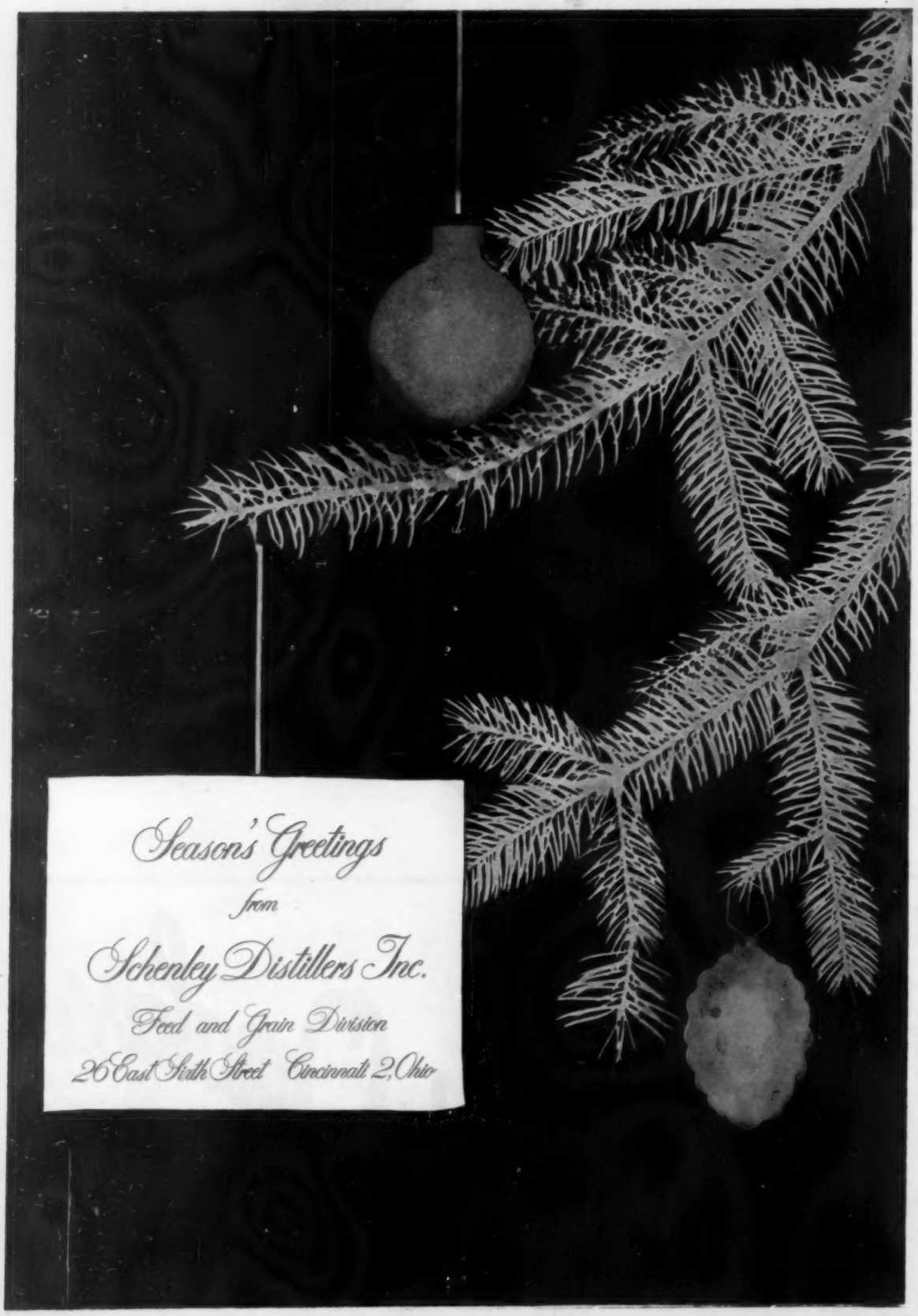
The advantages to nutritionists were covered by Mr. Smith. Of course, there is the obvious advantage of taking a manual job that may take several hours and converting it to machine where it may take a matter of seconds or minutes, he said. A nutritionist is a scientist and, as a result, the ability to get away from the manual effort involved and the amount of time expended is a tremendous advantage, Mr. Smith stated.

"In a way, it is a new tool for the nutritionist to use much as a stethoscope is a tool for a doctor to use," said Mr. Smith. "The doctor, of course, can always hear the heartbeat by pressing his ear to a person's chest just as the nutritionist can always formulate by manual methods. The use of the stethoscope, of course, enables the doctor to hear things that he might miss without it just as the nutritionist will pick up new and better formulations through use of the tool of linear programming. It also enables the nutritionist to do research into new formulations and into new feeds or old formulations very rapidly."

Advantages to the manufacturer are quite different from those to the nutritionist, Mr. Smith said. "He is very interested in minimum cost. He also is very interested in the competitive advantage that making a feed at a minimum cost may give him. Many companies are now involved in doing this, and this may make the competitive advantage much more important."

FEED DEALERS OPTIMISTIC FOR 1960

ST. PAUL—The 1960 Farm Business Poll recently conducted by The Farmer, a farm publication, indicated at least some optimism on the part of feed dealers in Minnesota and the two Dakotas. Of 616 replies to the poll, 46.9% expected better sales, 34.9% expected about the same and 18.2% expected less sales in 1960.



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Avg of 3 lots	% Potency Retained		
	30 Days	90 Days	120 Days
New Process Hetrogen K Premix	99%	98%	99%
Ordinary Vitamin K Premix	84%	67%	52%

STABILITY—field samples—ordinary vitamin K premix recently secured from feed mills

	% Potency Retained
Average of 7 lots	23%

(Actual potency of individual lots ranged from 0 to 45%)

STABILITY—adverse storage conditions— accelerated storage conditions 113°F at 80% relative humidity

Premix Potency	% Potency Retained after 30 Days	
	Old Style Premix	New Process Hetrogen K
16 gm/lb	49	91
8	27	92
4	39	91

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Capital Investment Increases as Farms Specialize

AMES, IOWA—Capital investment on the 200-acre Iowa farms whose operators keep records in cooperation with Iowa State University is near $75,000 per farm, according to H. B. Howell, extension farm economist, Iowa State University.

On specialized farms where 70% of the income came from beef feeding, the average capital investment was $141,655 on Jan. 1, 1958, Mr. Howell said. This included $88,500 in land and improvements, $42,269 in livestock and feed and $10,856 in machinery and equipment.

Hog farms showed $95,714 as the average capital investment, with $68,810 in land and improvements, $19,100 in feed and livestock and $7,814 in machinery and equipment.

Specialized grain farms averaged $112,073 investment, with $90,220 in land and improvements, $14,175 in feed and livestock and $7,678 in machinery and equipment. Grain farms were those where less than half the total value of all crops raised was fed to livestock.

Specialized dairy farms studied averaged the lowest total investment as of Jan. 1, 1958—$77,972. Of this, $56,530 was in land and improvements, $14,053 in feed and livestock and $6,389 in machinery and equipment.

Mr. Howell said 1958 brought the farmers cooperating in the record-keeping programs the best management returns of the four-year period. These farmers showed a "minus" $2,067 in management return in 1955. In 1956 they averaged $1,103 management return per farm, in 1957 $2,620 and in 1958 $4,869.

The average specialized hog farmer in this group for 1958 showed a management return of $8,070. The beef feeder showed an average of $9,889, the grain farmer $6,352 and the dairy farmer $3,480.

Management return, Mr. Howell said, is net income less 4% interest on the value of land and improvements; 6% interest on capital in feeds, livestock and machinery, and wages for the labor of the operator and his family.

OFFICE ESTABLISHED

DENVER, COLO. — Producer's Marketing Assn., formed by Colorado egg producers in the Denver area to market directly to retail stores, has established an office at 3190 W. Alameda Ave., with Gerald Mack, a producer-member of the group, acting as temporary manager. The 35 members now in the association represent a volume of some 1,000 cases of eggs weekly. Eggs distributed by the group will be cartoned under the name "Producers Brand."

Illinois Tests Protein Supplement In Rations for Hogs

URBANA, ILL.—The University of Illinois reports that tests indicate hog gains cannot be increased by feeding a mixture of protein supplements with corn, instead of just soybean oil meal.

Another university test shows that ½ or 1% of ground limestone added to corn-soybean meal hog rations gives the most desirable level of calcium.

Researchers designed the first test to see whether hog gains increase on rations containing corn, soybean oil meal and another supplement. These rations were compared with rations containing corn and soybean meal alone, explains Prof. D. E. Becker, animal scientist.

The researchers tested six rations with corn as the basic feed. To each they added one of the following: (1) soybean oil meal alone, (2) soybean meal and distillers dried solubles, (3) soybean meal and menhaden fish meal, (4) soybean meal and a special fish meal, (5) soybean meal and meat and bone scraps and (6) soybean meal or dried skim milk.

All pigs received the same vitamin and mineral supplement.

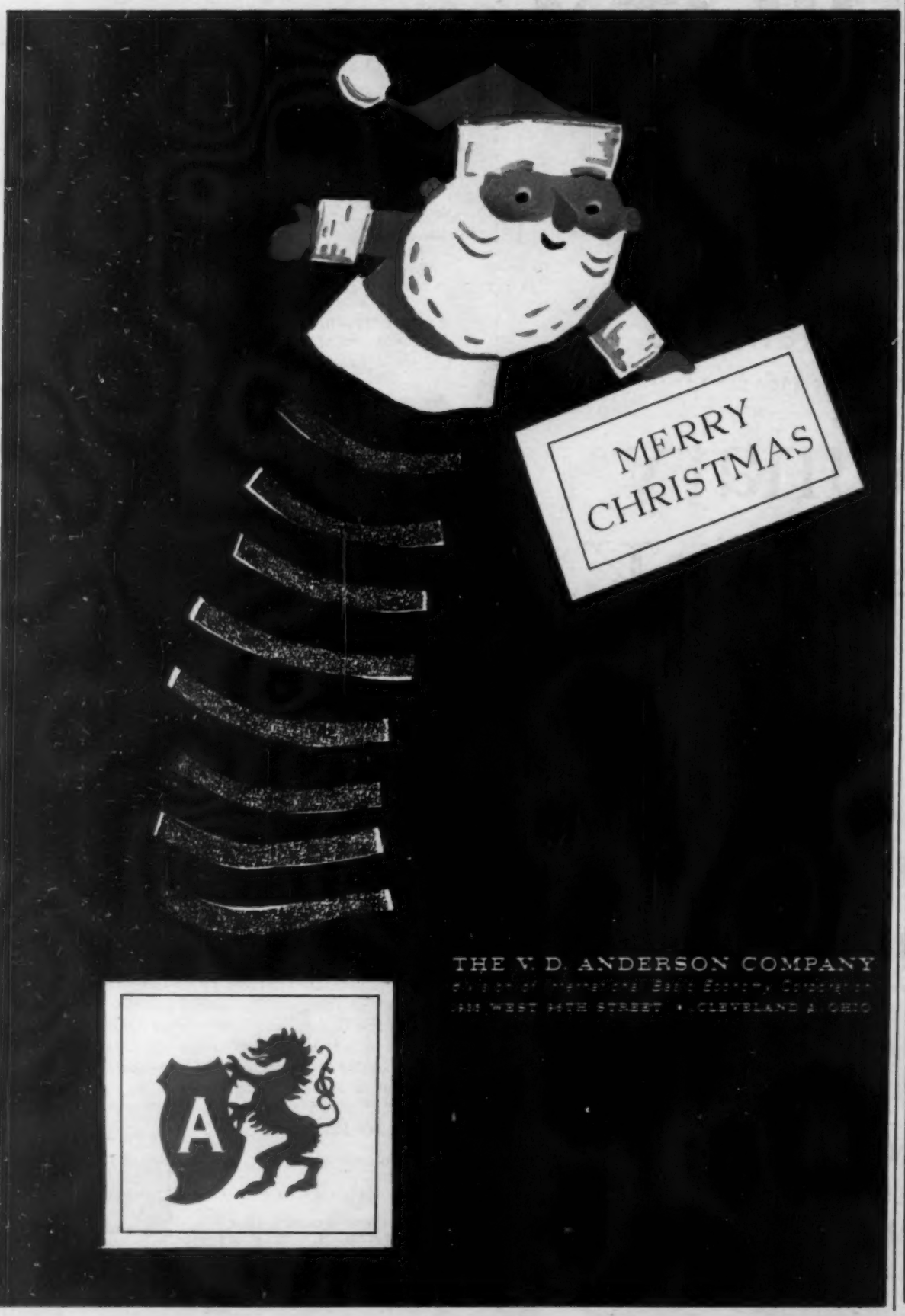
In terms of efficiency and rate of gains, the report said, the mixture of soybean meal and distillers dried solubles gave poor performance. But there were few or no differences among the other rations. Soybean meal performed just as well alone as when combined with other supplements. The researchers concluded that "there is no need to add an extra supplement when feeding properly fortified rations of corn and soybean meal."

In the second test, researchers studied various calcium levels in two types of growing-finishing rations. They wanted to see which level gave the best gains.

The first ration contained soybean meal, ground yellow corn, vitamins and minerals and ⅛% calcium. The second, in addition, contained a special fish meal supplying ½% calcium.

Using ground limestone, the researchers added to each ration four levels of calcium ranging from ⅛-2%.

The fastest, most efficient gains came from rations where ground limestone supplied ½-1% calcium. Even higher levels of calcium didn't seem to retard seriously rate and efficiency of gains. Prof. Becker warns, however, that farmers should not feed calcium levels that are too high, since it may cause parakeratosis.



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What Protein Level for Chicken Layer Diets?

By Dr. J. H. Quisenberry and John W. Bradley
Texas A&M College

Fifteen percent total dietary protein is recommended by the National Research Council as the requirement for chicken laying and breeder hens. This stated requirement presumes that this protein is so made up that it contains at least the minimum level of the required amino acids.

As poultry rations are normally compounded, this presumption may or may not be realized. The protein requirement is usually listed as a percent of the ration, and when so stated, is not only influenced by the quality or amino acid composition, but by rate of egg production, body weight and energy level of the feed.

Protein levels which were formerly adequate for low energy diets, fed to large bodied birds laying at a comparatively low rate, are not adequate for the modern light bodied layer producing at an 85-90% level and requiring only 3.5-4 lb. of a high energy type diet per dozen 24 oz. eggs.

Recent reports of satisfactory performance on 13% protein diets should be carefully considered in the light of these modern requirements before they are adopted by feed manufacturers or commercial egg producers.

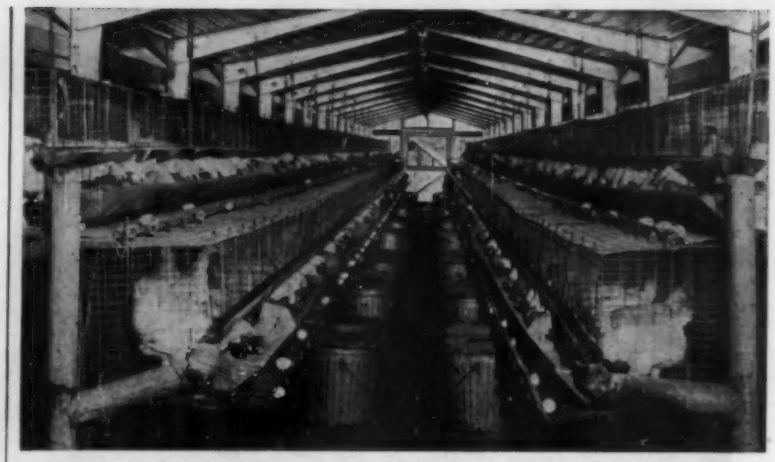
Other Research

A complete review of the many published papers on protein requirements of laying birds is beyond the scope of the present paper, but a number of workers—Heuser (1941); Heywang, et al (1955); Miller, et al (1956); Frank and Waibel (1959); Griminger and Fisher (1959); Thornton, et al (1957), and Thornton and Whittet (1959)—have reported satisfactory egg production with protein levels of 13-15%. On the other hand, a number of workers have reported higher levels to be necessary for optimum performance — Reid, et al (1951); Quisenberry and Williams (1952); Milton and Ingram (1957); Creek and Combs (1958), and Denton and Lillie (1959).

EDITOR'S NOTE: Dr. Quisenberry is head of the department of poultry science at Texas A&M College. He was a research assistant at Illinois before joining the Texas staff in 1936. He later was head of the poultry department at the University of Hawaii and then was named to head the Texas poultry science department in 1946. His major fields of research have been in poultry breeding, disease resistance, nutritional requirements, effects of hormones on market quality of poultry and effects of whole body irradiation on the domestic fowl. Mr. Bradley, who holds B.S. and M.S. degrees from the University of Arkansas, is farm superintendent at Texas A&M. He served as a feed service man for a feed mill in northern Arkansas for several years before joining the Texas staff.

Since protein concentrates are usually considerably higher in price than cereal grains, if the protein level of laying diets could be lowered without affecting performance, some saving in the cost of producing eggs could be effected.

Recent reports by Singsen have suggested that desirable effects might be obtained for heavy breed layers by restricting the feed intake during the laying period. Similar experiments for light breed stocks are under way at a number of experiment stations. During the past several years a number of experiments requiring detailed observation of laying birds have been conducted at the Texas Agricultural Experiment Station. Among other things it has been observed that birds normally reach their peak of production during the third or fourth month of the laying period. At about this time the birds tend to lose body weight.



FEEDING TEST—Shown is the arrangement of birds used in the experiment on protein level and changes in energy level. The end groups of birds in each row were not involved in the test. One replicate of 10 birds in each row was on each of the nine dietary treatments.

Purpose of Experiment

Whether these two phenomena have any causal relation remains to be determined. However, the present experiment was set up to attempt to determine if this slump in body weight could be prevented, and to observe if this would have any effect upon the decline in rate of lay after the birds peaked in production. Three protein levels were also included in the comparisons.

Nine groups of 40 increase pullets were housed in single 10x16 in. laying cages for these trials. Three groups were set up to receive 13%, three, 15%, and three, 17% protein. All three basal protein diets contained 1% vegetable oil.

At the end of three months of production the fat level for one group of birds on each protein level was advanced to 5%. At the end of five months of production the fat level for another group of birds on each protein level was advanced to 5%. The fat was added at the expense of milo, and the protein level was maintained by increasing the soybean oil meal level. In the case of the 13% protein diet, a slight increase in the poultry by-product meal was also made. The diets are given in Table 1.

At the present time, seven 28-day periods of production have been completed and the results are given in Tables 2 to 7. In Tables 2 to 6 the performance data are given for the first three periods when all three lots on each protein level were getting the same diets; for the 4th and 5th periods, when the second group on each protein level was getting a diet with 5% added fat; for the 6th and 7th periods when the second and third groups on each protein level were getting 5% added fat in the ration, and a summary of periods 1-7.

Body Weight

In Table 2 changes in body weight are shown as influenced by protein level, and additions of 4% fat at the end of three and five months of production, respectively. It is obvious that birds on the 13% protein were unable to maintain body weight. Addition of the fat to the 13% protein diet appeared to reduce the weight loss, and in general appeared to increase the body weight gain of the birds on the 15% and 17% protein diets, though the results are not entirely consistent.

Although the birds on the 13% protein diet averaged greater than 70% production for the first three months, it is apparent that both the

TABLE 1. Composition of the Laying Diets Used in the Energy-Protein Comparisons

Ingredient	13/1* %	13/5† %	15/1 %	15/5 %	17/1 %	17/5 %
Ground milo	60.00	55.00	55.03	48.75	49.25	44.25
Ground yellow corn	20.00	20.00	20.00	20.00	20.00	20.00
Soybean oil meal (44% P.)	2.50	3.00	4.20	6.75	10.25	11.25
Poultry by-product meal	2.00	2.50	5.00	5.00	5.00	5.00
Alfalfa meal	3.00	3.00	3.00	3.00	3.00	3.00
Distillers dried solubles	2.00	2.00	2.00	2.00	2.00	2.00
Oyster shell flour	4.25	4.25	4.25	4.25	4.25	4.25
Defluorinated rock phosphate (18% phos.)	2.50	2.50	2.50	2.50	2.50	2.50
Vitamin mineral mix‡	2.50	2.50	2.50	2.50	2.50	2.50
Vegetable oil	1.00	5.00	1.00	5.00	1.00	5.00
Salt	0.25	0.25	0.25	0.25	0.25	0.25

*13% protein and 1% fat.

†13% protein and 5% fat.

‡Vitamin mineral mixture contained per ton of feed: 4 gm. riboflavin, 10 gm. calcium pantothenate, 25 gm. niacin, 454 gm. choline chloride, 12 mg. vitamin B_{12}, 10 gm. penicillin, 10 gm. bacitracin, 4,540,000 I.U. vitamin A, 1,362,000 I.C.U. vitamin D_3, 5 lb. omafac, 20 lb. dry fish solubles, 10 lb. delactosed whey, ½ lb. manganese sulfate, and 8 lb. soybean oil meal.

TABLE 2. Change in Body Weight as Influenced by Dietary Protein Level and Changes in Fat Level

C/P Level*	Average Weight Change (gm.) First 3 Mos. April 11-July 3	4th and 5th Mos. July 4-Aug. 28	6th and 7th Mos. Aug. 29-Oct. 23	Periods 1-7 April 11-Oct. 23
13-1	—97	48	—87	—136
13-3	—70	—15	47	— 39
13-5	—15	21	—12	— 5
15-1	54	—13	80	124
15-3	48	42	22	113
15-5	80	30	35	147
17-1	135	34	—66	103
17-3	128	97	—27	198
17-5	111	12	— 1	122

*13, 15 and 17 are per cent protein in the respective diets. The 1, 3 and 5 are diets with 1% fat for the total 7-month period; 1% fat for the first 3 months and increased to 5% fat from the beginning of the 4th month on; 1% fat for the first 5 months and then increased to 5% fat at the beginning of the 6th month. The birds have, at the present, only completed 7 months of production.

TABLE 3. Egg Production as Influenced by Dietary Protein Level and Changes in Fat Level

C/P Level*	Average Hen Day Production: First 3 Mos. April 11-July 3	4th and 5th Mos. July 4-Aug. 28	6th and 7th Mos. Aug. 29-Oct. 23	Periods 1-7 April 11-Oct. 23
13-1	72.0	60.0	52.0	63.0
13-3	71.7	48.3	44.4	57.2
13-5	73.2	46.2	50.0	64.6
15-1	80.5	62.6	65.5	71.2
15-3	77.2	64.7	69.1	71.3
15-5	80.4	70.0	69.8	74.4
17-1	88.8	76.2	73.3	80.8
17-3	88.5	73.7	73.4	79.9
17-5	89.4	76.3	69.8	80.1

*13, 15 and 17 are per cent protein in the respective diets. The 1, 3 and 5 are diets with 1% fat for the total 7-month period; 1% fat for the first 3 months and increased to 5% fat from the beginning of the 4th month on; 1% fat for the first 5 months and then increased to 5% fat at the beginning of the 6th month. The birds have, at the present, only completed 7 months of production.

TABLE 4. Egg Size as Influenced by Protein Level and Additions of Fat to the Laying Diets

C/P Level*	Average Egg Size (gm.) First 3 Mos. April 11-July 3	4th and 5th Mos. July 4-Aug. 28	6th and 7th Mos. Aug. 29-Oct. 23	Periods 1-7 April 11-Oct. 23
13-1	49.9	53.3	54.6	52.1
13-3	52.3	51.9	54.8	52.8
13-5	51.3	52.4	55.4	52.6
15-1	53.7	55.1	58.3	56.3
15-3	53.6	54.1	58.2	55.1
15-5	54.3	57.5	59.8	56.8
17-1	55.2	57.8	60.9	57.5
17-3	55.2	57.6	60.2	57.2
17-5	55.7	57.4	59.8	57.3

*13, 15 and 17 are per cent protein in the respective diets. The 1, 3 and 5 are diets with 1% fat for the total 7-month period; 1% fat for the first 3 months and increased to 5% fat from the beginning of the 4th month on; 1% fat for the first 5 months and then increased to 5% fat at the beginning of the 6th month. The birds have, at the present, only completed 7 months of production.

TABLE 5. Feed Conversion as Influenced by Protein Level and Additions of Fat to the Laying Diet

C/P Level*	Feed/Doz. 24 Oz. Eggs			
	First 3 Mos. April 11-July 3	4th and 5th Mos. July 4-Aug. 28	6th and 7th Mos. Aug. 29-Oct. 23	Periods 1-7 April 11-Oct. 23
13-1	5.0	4.9	4.7	4.9
13-3	4.9	5.6	5.2	5.2
13-5	4.7	4.6	4.7	4.7
15-1	4.3	4.4	3.9	4.2
15-3	4.6	4.6	3.7	4.3
15-5	4.4	4.1	3.7	4.1
17-1	3.8	3.6	3.3	3.6
17-3	3.8	3.7	3.2	3.6
17-5	3.7	3.7	3.5	3.7

*13, 15 and 17 are per cent protein in the respective diets. The 1, 3 and 5 are diets with 1% fat for the total 7-month period; 1% fat for the first 3 months and increased to 5% fat from the beginning of the 4th month on; 1% fat for the first 5 months and then increased to 5% fat at the beginning of the 6th month. The birds have, at the present, only completed 7 months of production.

TABLE 6. Mortality as Influenced by Protein Level and Additions of Fat to the Laying Diet

C/P Level*	No. Birds	Mortality (Per Cent)			
		First 3 Mos. April 11-July 3	4th and 5th Mos. July 4-Aug. 28	6th and 7th Mos. Aug. 29-Oct. 23	Periods 1-7 April 11-Oct. 23
13-1	40	2.5	0.0	2.5	5.0
13-3	40	0.0	0.0	0.0	0.0
13-5	40	0.0	0.0	0.0	0.0
15-1	40	0.0	5.0	0.0	5.0
15-3	40	0.0	2.5	0.0	2.5
15-5	40	2.5	0.0	2.5	5.0
17-1	40	2.5	0.0	0.0	2.5
17-3	40	0.0	0.0	0.0	0.0
17-5	40	0.0	0.0	0.0	0.0

*13, 15 and 17 are per cent protein in the respective diets. The 1, 3 and 5 are diets with 1% fat for the total 7-month period; 1% fat for the first 3 months and increased to 5% fat from the beginning of the 4th month on; 1% fat for the first 5 months and then increased to 5% fat at the beginning of the 6th month. The birds have, at the present, only completed 7 months of production.

TABLE 7. Performance During the First 7 Months of Egg Production as Affected by Protein Level of the Diet
April 11, 1959, to Oct. 23, 1959

Protein Level	No. Birds	Av. Change in Body Wt.	Hen-day prod.	Av. Egg Size	Feed Per Doz. 24 oz. Eggs	—Mortality—	
%		Gm.	%	Gm.	Lb.	No.	%
13	120	—59	61.6	52.5	4.9	2	1.67
15	120	128	72.3	55.7	4.2	5	4.17
17	120	141	80.3	57.3	3.6	1	0.83

TABLE 8. Change in Amino Acid Content by Substituting 1,300 lb. Corn and 100 lb. SOM for 1,400 lb. Milo

	1400 lb. Milo %	1300 lb. Corn 100 lb. SOM %	Difference
Lysine	.1960	.3220	.1260
Methionine	.0980	.1630	.0650
Cystine	.1400	.1360	—.0040
Tryptophane ..	.0630	.0735	.0105
Arginine	.2310	.4115	.1805

15% and 17% levels consistently increased the rate of lay. Birds on the 17% protein diets laid significantly more eggs than those on the 15% protein, although the difference was almost completely erased during the 7th month of production. It will be interesting to observe the comparative production of the 15% and 17% protein groups as the laying period advances.

Table 4 shows the pronounced effects that dietary protein level has upon average egg size. Every egg laid by each of the groups was weighed, and the averages given in Table 4 are for all eggs laid during the designated periods. Although the greatest difference in egg size was between the 13% and the 15% protein groups, the eggs from the birds on the 17% protein were significantly heavier than those from the birds receiving 15% protein. Addition of 4% fat to the diet either at three or five months did not appear to influence egg size.

Rate of Production

Since feed required per unit of eggs produced is so strongly influenced by rate of production, Table 5 largely reflects the effects of protein level on rate of production, rather than feed efficiency, though no doubt both are reflected by the figures given in this table. The surprising thing about Table 5 is the lack of reflection of a higher feed efficiency as a result of the addition of the extra fat. At no protein level is a higher efficiency for the diet containing 5% fat apparent. Perhaps this will be reflected later in the laying period.

Mortality has been relatively low in all groups to date. The highest mortality has been in the 15% protein groups, as shown in Table 6.

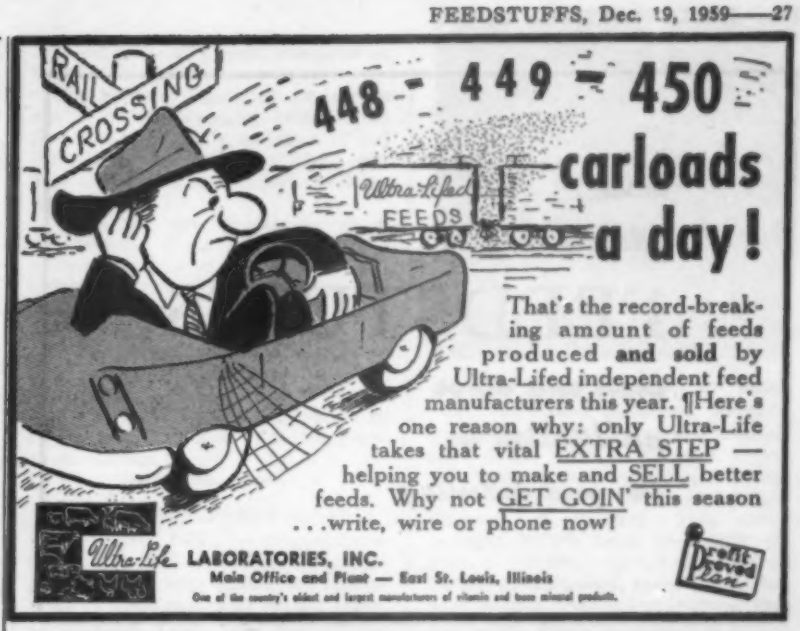
Since to date there appears to be little advantage obtained by the addition of fat either at three or five months of production, the three groups on each protein level have been combined, and a summary of the effects of the three protein levels on the major performance factors is given in Table 7. Comments made about Tables 2-6 are summarized in Table 7, and require no further elaboration.

In searching for a possible explanation of why some laboratories have obtained satisfactory egg production with diets containing 13% protein, and others obtain best results with a 17-18% protein diet, there are several factors mentioned earlier which might be repeated here. They are: (1) Quality of protein, (2) rate of lay, (3) body weight of the birds, (4) energy level of the diet, and (5) maintenance requirements as influenced by environmental temperature, air movement and humidity. Composition of practical diets for various regions might well influence factor No. (1).

Use of Grain Sorghums

In the Southwest the grain sorghums are usually much cheaper than corn and are used plentifully in laying rations by feed manufacturers in this area. In Table 8 is given the effect on critical amino acid composition of substituting for 1400 lb. of milo 1300 lb. of corn and 100 lb. of soybean oil meal per ton of the ration. This substitution would not change the total protein of the finished ration but very little, if any.

If the difference in protein between the milo and corn were made up with some of the animal proteins, the differences in amino acid composition



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might be changed even more than those shown in Table 8. Feed manufacturers must keep alert to the effects these substitutions may have.

Currently several samples of milo have shown a very low protein content, and it is possible that with the advent of hybrid grain sorghums, before long we may be substituting milo for corn on a pound-for-pound basis with no adjustment for the differences in protein content of the two grains.

Although the data reported here are in the nature of a progress report, the differences seem great enough to justify the recommendation that if a low fiber, well fortified laying diet is used, to obtain optimum performance, such diets should contain at least 17% protein.

♥ ♥

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Daffin Firm Appoints District Manager

LANCASTER, PA.—Melvin L. Thorne, Beresford, S.D., has been appointed district manager for Daffin Feedmobile sales in the mountain states, according to Irl A. Daffin, president, Daffin Manufacturing Co.

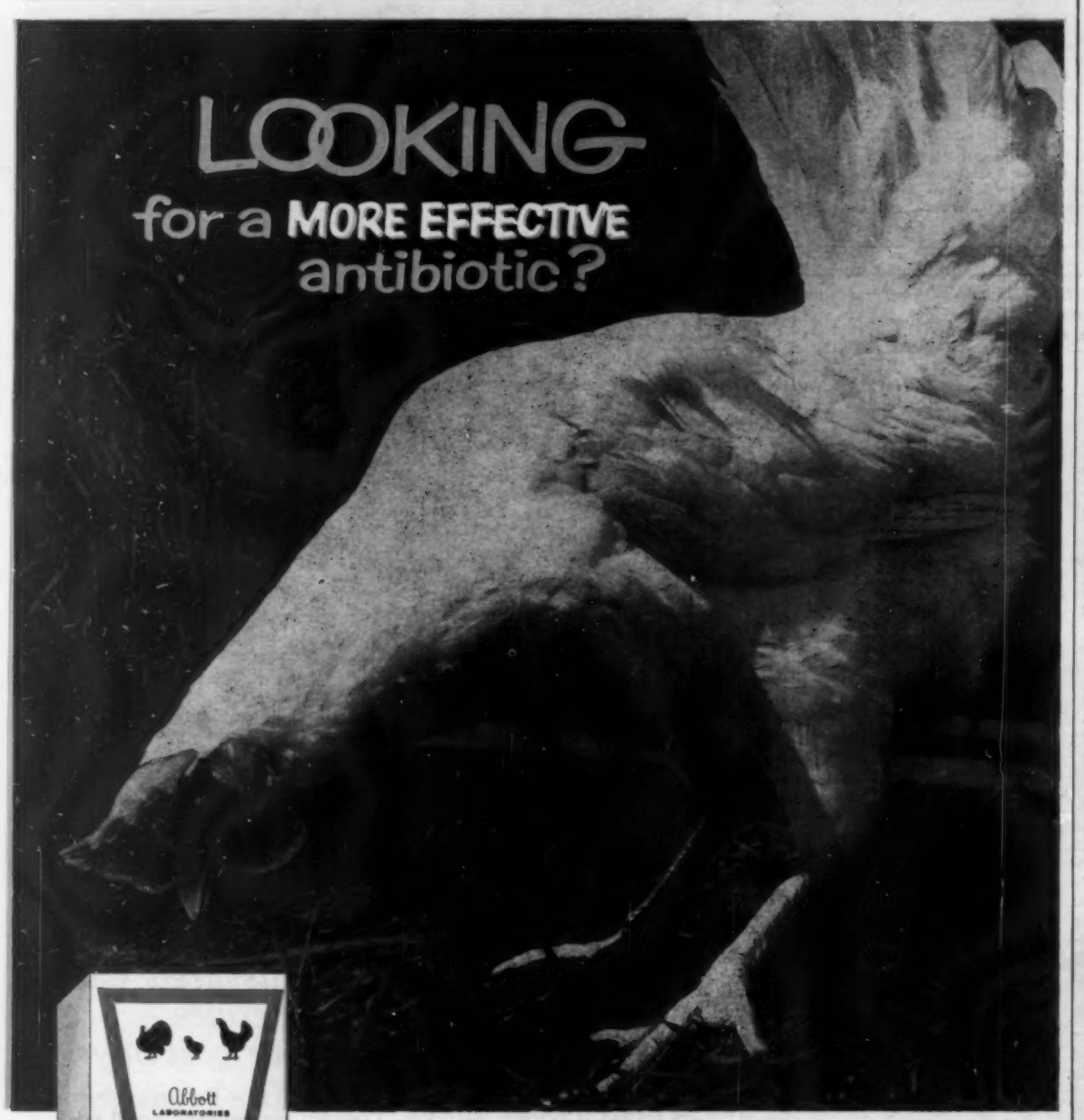
M. L. Thorne

Mr. Thorne was a clothing merchant in South Dakota for 20 years and later conducted a Daffin Feedmobile service out of Gettysburg, S.D. He joined Daffin in 1958 as a sales representative in South Dakota. Mr. Thorne's district is newly organized, according to the announcement.

The firm manufactures mobile and packaged feed processing plants, pneumatic conveying systems, pelleting machines and industrial batch mixers.

NEW PELLET FEED FIRM

SALEM, S.D. — Construction has begun of a new building on Highway 38 near here to house Veco Feeds, which will produce livestock and poultry feeds in pellet form, according to Joe Vetter, owner. The Veco product will contain grain, hay, cane or beet molasses and supplements which will be ground into meal, mixed with other ingredients and pelleted.



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Oklahoma State Team Wins Inter-Collegiate Poultry Judging Test

CHICAGO—Oklahoma State University took first, North Carolina State College second and Kansas State University third in all-around judging at the 36th annual intercollegiate poultry judging contest here. Students from 16 colleges and universities participated.

Coached by J. C. Gilbreath, the Oklahoma team scored 4,084 points out of a possible 4,500 for all-around judging in breed selection, market products and egg production. Team members, all from Oklahoma, are Walter Mullendore, Wellston; William G. Praytor, Caddo; Dewey Holdeman, Ringwood, and John Casey (alternate), Stillwater.

Oklahoma captured the lead in all-around judging by winning a first in breed selection and market products judging. North Carolina State College, coached by T. T. Brown, won first in production judging.

The Oklahoma team was awarded the traveling grand trophy of the Institute of American Poultry Industries, an award which is retained by a team when it wins first place in all-around judging three times. It was also awarded the Ralston Purina Co. champion trophy for 1959. The trophies were presented by Dr. H. C. Zindel, chairman, poultry department, Michigan State University.

Here is the order in which the 16 schools finished in the all-around placings: Oklahoma State University, North Carolina State College, Kansas State University, Texas A&M, University of Arkansas, University of Kentucky, South Dakota State College, University of Missouri, Washington State University, University of Nebraska, University of Wyoming, Pennsylvania State University, University of Minnesota, Iowa State University, Southern Illinois University and University of Tennessee.

Serving on the committee on arrangements for the contest were Norman Clizer, Hales & Hunter Co., committee chairman; Dr. E. E. Schnetzler, DeKalb Agricultural Assn., contest chairman; Oscar A. Day, Wilson & Co.; Lloyd H. Geil, Poultry & Egg National Board; E. D. Griffin, Allied Mills; C. L. Haines, Swift & Co.; Dr. A. William Jasper, American Farm Bureau Federation, and Frank Wollney, Institute of American Poultry Industries.

New Turkey Plant In Utah Operating

ST. GEORGE, UTAH—Barlocker enterprises have put into operation a new turkey processing plant here, Bills Best, Inc., according to William A. Barlocker, president of Barlocker Farms and Hatchery Co. and the new plant.

The Barlocker-owned farms, hatchery and processing plant comprise an integrated operation.

The hatchery operation alone runs about 20,000 breeding hens. From these, 600,000 poults will be sold and the farms will ship a million eggs annually to U.S. and Canadian hatcheries.

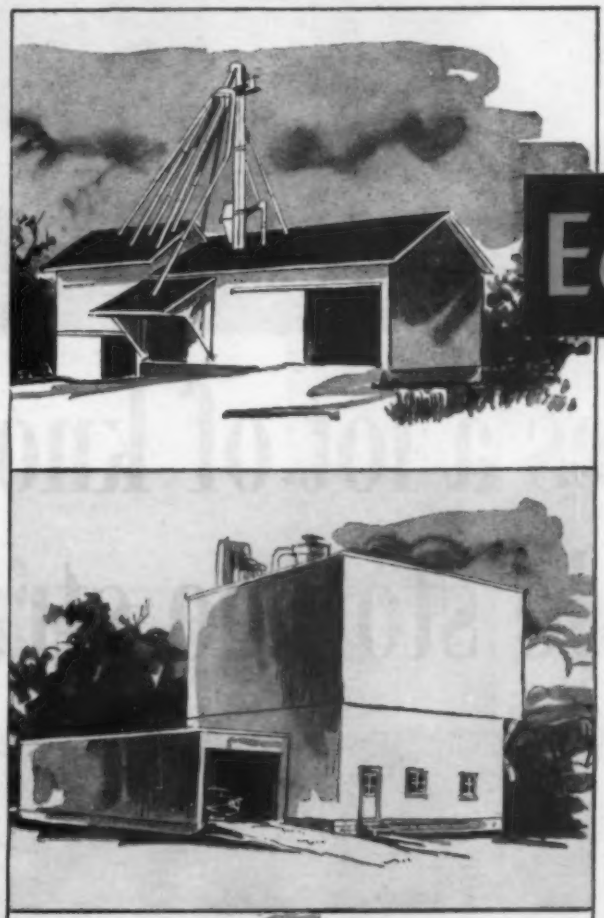
"With the new processing plant, the present stock of 160,000 birds probably will be raised to more than 300,000 making it possible to operate on a year-round basis," Mr. Barlocker said.

In addition to the $250,000 processing plant, another $250,000 program under way in Enterprise, Washington County, will enable the birds to be housed in sheds for "confinement rearing."

GRAIN FIRM INCORPORATES

DOVER, DEL. — Germantown Grain Co. filed a charter of incorporation here with authorized capital stock of 1,000 shares at no par value. Corporation Trust Co., Wilmington, Del., is serving as the principal office.

PRESENTATION — M. C. Small (left), executive secretary, National Turkey Federation, is shown presenting a $7,500 check to Ralph J. Thomas, president, Poultry & Egg National Board, at a recent meeting of PENB directors in Chicago. This check brought NTF's total to PENB for 1959 to $30,000, which represents its budget commitment. Investments this year to date from other sources bring the turkey industry income to PENB to $37,763.



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Research Council Of IAPI Suggests Research Needs

CHICAGO — Thirty-six recommendations for needed research in the fields of poultry and egg utilization, marketing, home economics, farm production, and marketing services and education came out of the annual fall meeting of the Institute of American Poultry Industries Research Council in Chicago recently.

The two-day session was attended by 59 men and women scientists from the poultry and egg industry, government, education and the IAPI staff.

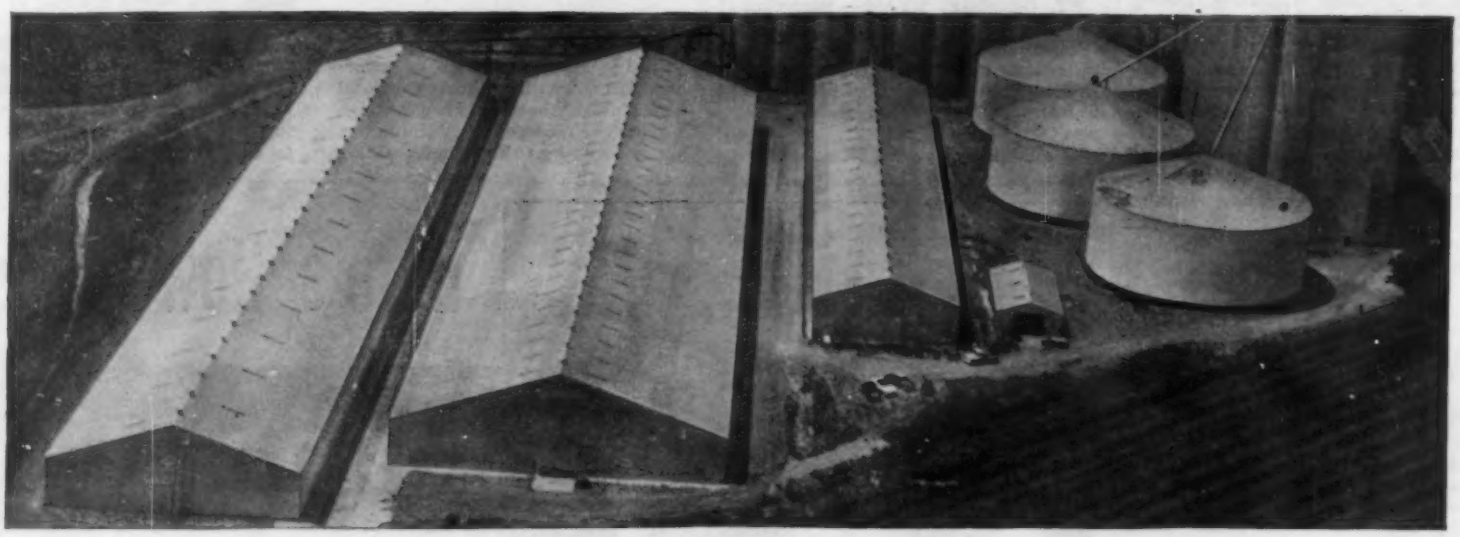
In the council's recommendations, which will be transmitted to the U.S. Department of Agriculture's poultry research and marketing advisory committee, special emphasis was given to the need for basic information on the physiochemical changes occurring in poultry during the post mortem period; the flavor of poultry meat; the composition and stucture of eggs in relation to potential functional properties; factors affecting the microbiological penetration of shell eggs; improved criteria for inspection of poultry for wholesomeness; nutritional values of eggs and poultry meat; the role of fats and fatty acids in nutrition; appropriate statistically valid sampling techniques for liquid or frozen egg products, egg solids, raw and processed poultry products, and the development of new avenues of consumption for egg white.

"The council feels that when such basic information becomes available, the industry can proceed with applied research, based on these findings, for product improvement and product development," said Harold M. Williams, IAPI president.

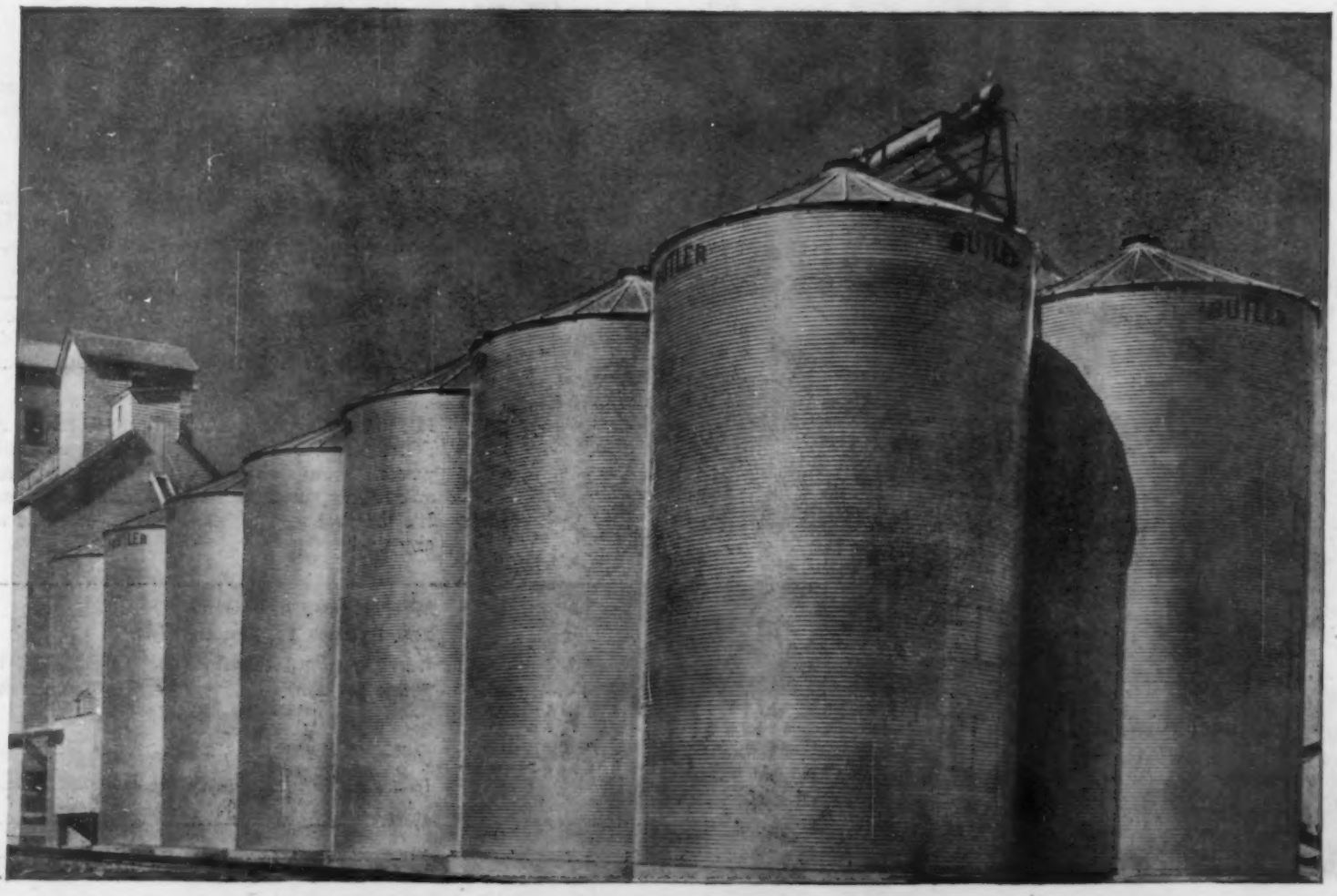
In the field of marketing research, the IAPI Council stressed the need for motivation research on consumer behavior patterns affecting the consumption of eggs and poultry.

An afternoon of the meeting was devoted to a panel presentation on food preservation, including chemical methods and antibiotics, canning, radiation sterilization and freeze-drying.

Dr. Carl H. Koonz, Swift & Co., Chicago, serves as this year's director of the IAPI council. It's executive committee is composed of: Dr. R. H. Forsythe, Henningsen, Inc., chairman of the analytical methods division of the council; J. C. Fritz, Dawe's Laboratories, Inc., chairman of the farm production division; W. C. Loy, Wilson & Co., chairman of the human nutrition division; H. Wayne Miller, Washington Cooperative Farmers Assn., egg division



It takes a lot of know-how to provide storage structures



chairman; A. Barde Rogers, Armour & Co., poultry division chairman; A. J. Steffen, Wilson & Co., sanitation division chairman; Dr. J. R. Stokes, chairman of the microbiology division, and Dr. Hans Lineweaver, western utilization branch, USDA, and Dr. George F. Stewart, University of California.

The annual spring meeting of the research council is now scheduled to be held at the western utilization research and development laboratory, USDA, Albany, Cal.

Copies of the council's complete research recommendations are available from the Institute of American Poultry Industries, 67 East Madison St., Chicago 2, Ill.

Agency Promotes Eggs

MILWAUKEE — Klau-Van Pietersom-Dunlap, Inc., advertising agency, hands out hard-cooked eggs, salt dispensers and promotional material on the "Golden Goodness of Eggs" to agency visitors in Milwaukee.

KVPD has also helped distribute eggs for its client, Hess & Clark, division of Vick Chemical Co. and manufacturer of feed medication products.

The year-round campaign is designed to aid the poultry industry by encouraging the public to eat more eggs, officials said.

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★ More Vitamin-B¹
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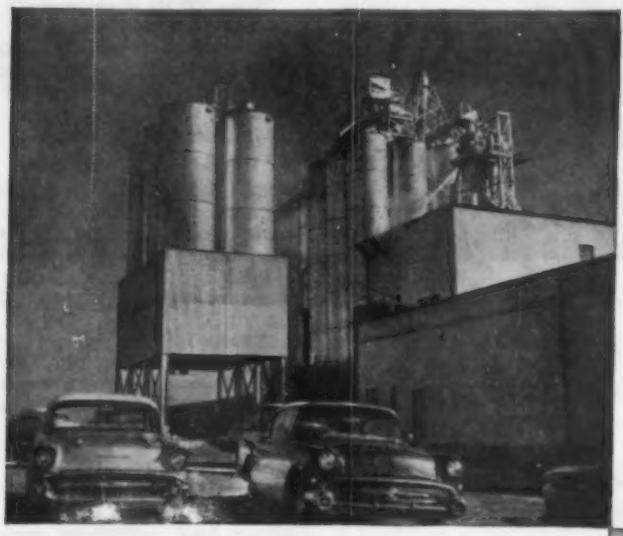

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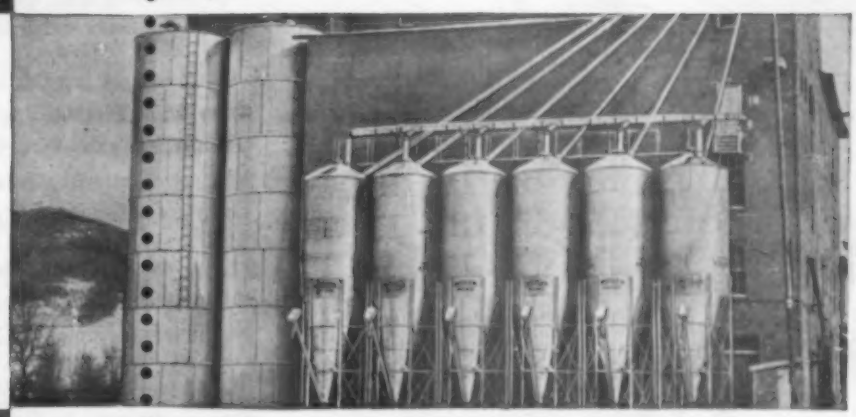

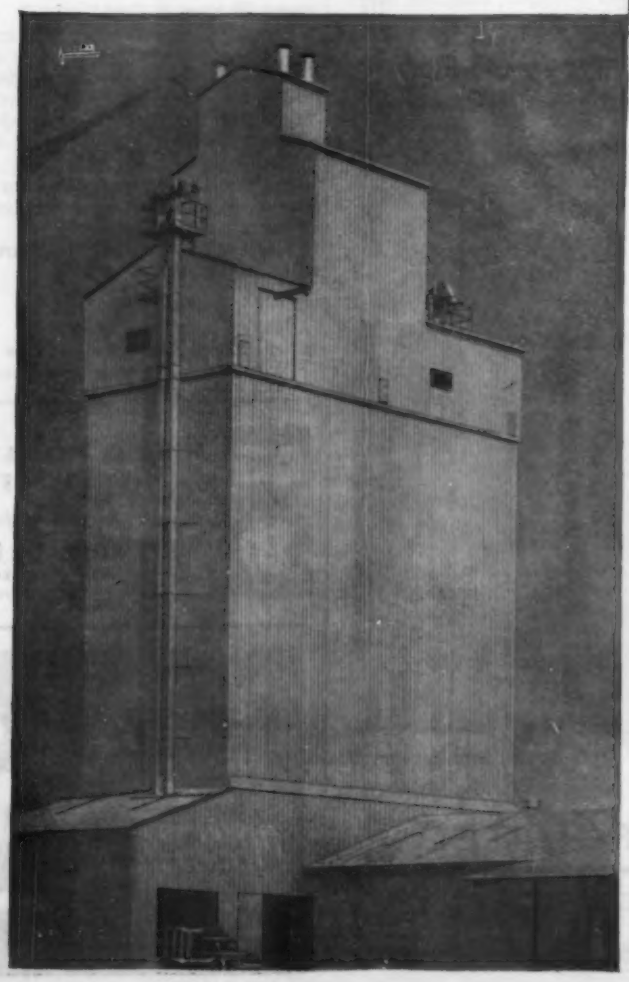

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JOE BROOKS

BY AL P. NELSON

It's the Spirit That Counts

It was mid-December and that evening Joe Brooks stood in the kitchen of his home drying dishes for his wife. Upstairs the twins, Joe, Jr., and Jimmy, were playing beatnik music on their record player.

"That music gives me the creeps, Mary," said Joe. "Now I wish I hadn't gotten that record player for them."

"It's a passing fad, Joe," said his practical wife. "Don't get distressed about it. Next year it will be something else. Besides, we have an important decision to make tonight."

"We have? What is it?"

Mary smiled as she rinsed the soap suds from her capable hands. "What kind of Christmas celebration are you going to have this year for customers?"

"Oh, I don't know," Joe said a little wearily. "We have had so many celebrations and parties in the past that it's hard to come up with something new."

"Why, Joe," Mary said in a shocked voice. "We don't need anything new for Christmas. It's the spirit of Christmas that counts. And the spirit of Christmas is a very, very old thing and always wonderful."

"That's right," Joe agreed. "Oh, I thought of my customers. I made a purchase of a special serrated kitchen knife which I am going to give to customers—the women, that is. The men are going to get a screwdriver set."

"Fine," said Mary. "But I have an idea I'd like to have you consider."

Joe chuckled. "You and your ideas. Well, what's this one?"

Mary took Joe's dish towel and hung it up to dry, and led him into the livingroom. "Sit down," she invited, "this is going to take some discussing."

"Sure, I'll sit down if you'll sit on my lap," Joe challenged.

"Oh, you!" Mary said. But she seemed pleased that Joe had suggested this. It meant—well, what did it mean?

"I'm listening," Joe said.

Holiday Baked Foods

Mary sat down at the other end of the sofa. "At Christmas, Joe, every home usually blossoms out with special baked foods and candies."

"And turkeys and stuffing," Joe conceded. "Gosh, I'm getting hungry already."

"That's it," Mary pointed out. "People are happy at Christmas. They like to gather with friends, have a bite to eat and chat. So, let's arrange for that."

"How?"

Mary smiled. "Well, Joe, every farm wife has a special food which she makes only at Christmas. Some women bake pfeffernuss, some make Danish kringles, some fruit cake, some make Christmas candies and some make special popcorn balls."

"Why did you mention those things?" Joe said. "I'm hungry already and it's only an hour past supper."

"Joe, why couldn't we run a contest at the store, say on the last Saturday before Christmas? We could offer to give prizes to the farm women who would bring in the best fruit cake, Christmas cookies, coffee cakes, doughnuts and candies. Maybe a bag of feed to the first prize winner in each classification."

"Yipe!" cried Joe, "that might mean 10 bags of feed."

"Well, you can take off your markup, can't you?" Mary came back. "Those articles I read in Feedstuffs about the giveaway programs of the Mapleton, Wis., Feed and Hardware and of the E. T. Van Buren & Sons, Inc., Hobart, N.Y., said that both these firms got more business by giving a little and not concentrating solely on taking."

"So they did. I read those articles a couple of times."

Sell Samples

Mary's blue eyes were eager. "Joe, after the Christmas goodies are

(Turn to JOE BROOKS, page 65)

Grandma could get away with it!

Grandma's recipes were a pinch of this and a dibby-dab of that.

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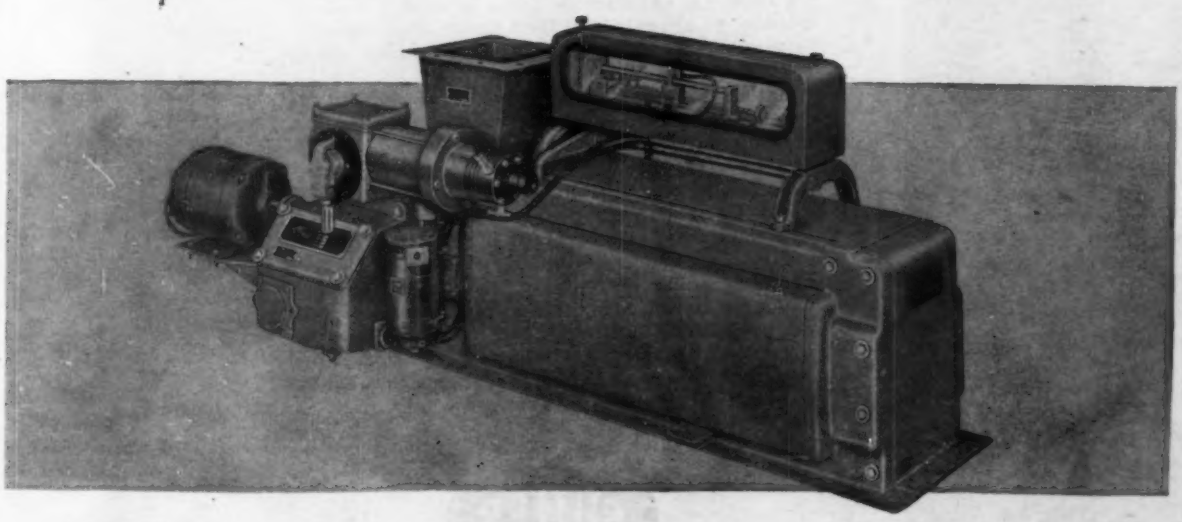

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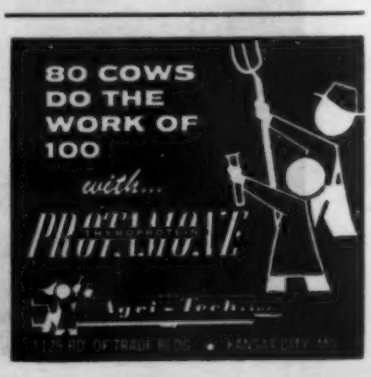

How much E is enough?

To insure adequate nutrition these authorities now recommend adding vitamin E supplement to feeds at these levels.

For literature citations, write to DPi.

Source	Type of Feed	Supplementation in International Units of Vitamin E per ton
Dr. Myron W. Pasvogel Dept. of Poultry Science University of Arizona, Tucson, Arizona	Chicken Layer (With BHT)	5,000
	Chicken Breeder (With BHT)	5,000
Dr. E. P. Singsen Dept. of Poultry Science University of Connecticut Storrs, Connecticut	Chick Starter and Broiler	
	(Without BHT*—Total α-tocopherol 14,000 to 22,000 units per ton)	4,000 to 8,000
	(With BHT*—Total α-tocopherol 14,000 to 22,000 units per ton)	Zero to 8,000
	Turkey Breeder (All-mash)	20,000 to 30,000
Dr. Milton L. Scott Dept. of Poultry Husbandry Cornell University Ithaca, New York	Turkey Starter	5,000
	Turkey Grower (All-mash, 24% protein, with BHT and brewers' dried yeast)	5,000
	Turkey Grower (All-mash, 20% protein, with BHT and brewers' dried yeast)	5,000
	Turkey Grower (All-mash, 18% protein, with BHT and brewers' dried yeast)	5,000
	Turkey Grower (All-mash, 16% protein, with BHT and brewers' dried yeast)	5,000
	Turkey Finisher (All-mash, with BHT and brewers' dried yeast)	5,000
	Turkey Grower (With grain, 20% protein,† BHT, and brewers' dried yeast)	10,000
	Turkey Breeder (With grain, 24% protein,† and brewers' dried yeast)	40,000
	Turkey Breeder (All-mash, 18% protein,† with brewers' dried yeast)	30,000
	Duck Breeder (With brewers' dried yeast)	7,000
	Chick Starter†	5,000
	Broiler†	5,000
	Chicken Breeder (All-mash)†	5,000
Dr. T. D. Runnels Dept. of Animal and Poultry Husbandry University of Delaware, Newark, Delaware	Broiler (in batteries)	5,000
Dr. Henry L. Fuller, University of Georgia Poultry Department, Athens, Georgia	Broiler	Zero to 4,000
Dr. Stanley L. Balloun Dept. of Poultry Husbandry Iowa State College Ames, Iowa	Turkey Starter	7,000
	Turkey Grower (All-mash)	5,000
	Turkey Breeder (All-mash)	10,000
	Chicken Breeder (All-mash)	5,000
Elbert J. Day, Mississippi State College Dept. of Poultry Husbandry State College, Mississippi	Turkey Starter	8,000
New England College Conference	Turkey Starter	10,000
	Turkey Grower	10,000
	Turkey Breeder	30,000
Dr. Edward C. Naber Dept. of Poultry Science The Ohio State University Columbus 10, Ohio	Turkey Starter	8,000
	Turkey Grower	8,000
	Turkey Finisher	8,000
	Turkey Breeder	8,000
Dr. S. J. Slinger Ontario Agricultural College Guelph, Ontario, Canada	Turkey Starter and Grower	
	(Without BHT)	6,700
	(With BHT)	5,000
	Turkey Breeder	
	(Without BHT)	10,000
	(With BHT)	6,700
Dr. C. W. Carlson Dept. of Poultry Husbandry South Dakota State College Brookings, South Dakota	Turkey Breeder	10,000
	Chicken Breeder	10,000
	Turkey Starter	4,500
	Chicken Starter	4,500
Dr. J. R. Couch Poultry Science Department Texas A. & M. College College Station, Texas	Chick Starter and Broiler	5,000
	Chicken Breeder	10,000
	Turkey Starter and Grower	5,000 to 8,000
	Turkey Breeder	20,000
	Chicken Layer	2,500
Dr. Leo S. Jensen‡ State College of Washington Dept. of Poultry Science, Pullman, Washington	Turkey Breeder	10,000 to 20,000

		Supplementation in International Units of Vitamin E per mink per day
Dr. John R. Gorham Dept. of Veterinary Pathology State College of Washington Pullman, Washington	Mink adults (Nov. 1-June 1)	5 units
	Mink kittens (June 1-Nov. 1)	10 units
	Mink kittens (treating an outbreak of yellow fat disease)	20 units

*Dr. Singsen's recommendations cover vitamin E from all sources. This allowance may be reduced in the presence of an antioxidant as shown.

†When less than 50 lb./ton of alfalfa are used on all-mash basis, and/or when there is reason to suspect harvest or storage damage to critical ingredients.

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Engineering Aspects and Costs Of a Pelleting Installation

"The installation should be tailored to provide the most flexible and efficient operation for the individual feed plant."

By C. N. Hultberg
California Pellet Mill Co.

EDITOR'S NOTE: The accompanying article is from a recent talk by C. N. Hultberg, vice president, California Pellet Mill Co., Crawfordsville, Ind., at the 11th annual Nebraska Feed and Nutrition Conference. The article covers several aspects of planning and installing pelleting and crumblizing facilities.

During the initial consideration of a pelleting installation, we must first determine the type material to be pelleted; second, the hourly capacity required; third, the method of installation, and fourth, cost. Unfortunately, initial cost is usually given first consideration.

Assuming that there exists a need and justification for the pellet mill installation, the lowest cost unit is not measured by the dollar invested. It is measured by the ability to choose the equipment best suited for individual requirements.

The supposition that all pellet mills are designed and constructed to pellet all materials equally well is not true. Some pellet mills are designed to do this, others are designed for specific purposes and are limited in application.

Low and High Fiber

Most materials are placed in two basic classifications—high fiber or low bulk density, and low fiber or high bulk density. The capacity of a pellet mill varies directly with the bulk density of the material being pelleted, except for high milk and sugar diets.

If only low fiber diets weighing 30-40 lb. per cu. ft. are pelleted, the pellet mill need be only half the size of a mill if you are running 15-20 lb. cu. ft. material. This is accepted as elementary. Nevertheless, with the increase in pelleting of high fiber feeds and grasses, many installations are not going to be adequate.

In further consideration of high and low fiber pelleting, pellet mill design should be recognized. The pellet mill supplier must take into account cost of manufacture and the available market. Thus, a pellet mill can be provided with 5 ton per hour capacity pelleting only low fiber material, with a die diameter of 12 in., using 50 h.p. This unit can be furnished at a cost of 20% less than a 50 h.p. pellet mill with die diameter of 16 in., same capacity on both units.

The small diameter die is very efficient on a low fiber formula, but is inefficient on a high fiber feed. The large diameter die pellet mill should be used where the operation will require pelleting of both low and high fiber materials.

Again, referring to pellet mill capacity, a pellet mill will produce 200 lb. pellets per hour per horsepower on a material weighing 36 lb. per cu. ft. Using the only other rule available, this same unit will produce 100 lb. of pellets per hour per horsepower on a material weighing about 17 to 18 lb. per cu. ft. The 100 h.p. pellet mill will provide 10 tons hourly on low fiber and 5 tons hourly on high fiber. The pellet mill selection must be made on the basis of individual production requirements.

"Hourly capacity" is referred to because this determines the sizing of handling and conditioning equipment. "Hourly capacity" does not alone determine daily or monthly production. Every formula change requires about 10 minutes. In an eight hour day, 16 formula changes is a time loss of 2 hours and 40 minutes. In the original selection of equipment, to provide a given daily production rate, the formula change time and die change time should be deducted as a non-productive period.

In discussing sizing and type of pellet mill, serious thought should be given to the use of molasses. For many years it was taken for granted that only high fiber feed would carry molasses, that the amount of molasses used in pelleted feed would vary inversely to the protein content and that if over 15% molasses was to be used, special equipment would be required. Today it is only necessary to specify the proper type of pellet mill mixer and feeder so that molasses can be mixed immediately before pelleting. This method allows the use of up to 30% molasses on a standard pellet mill regardless of formula. It makes possible the use of molasses at any level indicated by the formula, rather than the determination of the formula in accordance with the molasses percentage.

Consideration should also be given to steam or moisture addition in the preparation of the ingredients for pelleting. This provides the greatest single variant in the operation. The amount of moisture and/or heat to be added must depend on the physical and chemical properties of the ingredient or ingredients being pelleted.

Steam, of course, is used for both moisture as a lubricant and to provide heat to gelatinize and break down certain ingredients. It provides highest quality pellets at highest capacity.

In determining boiler size we use the factor of 6% of the maximum pellet mill capacity hourly. Thus, at 20,000 lb. per hour, 1200 lb. of steam per hour would be required on a boiler equivalent to 36 h.p. Bear in mind that the 6% accounts for certain losses as the steam enters the pellet mill mixer, and for lower boiler efficiency due to cold water feed. In other words, the boiler rating will be based on feed water at 212°, and when the pellet mill is consuming the steam there will be no condensate return.

Cooling Pellets

An important part of the pellet mill installation is the conditioning or cooling of the pellets. Remember that a quality pellet as it leaves the die is soft. As it is properly cooled, it hardens and becomes tough.

Two basic cooler designs are available. Both employ the principle of surface cooling. Air at atmosphere is drawn over the pellet surface, and the heat transfers from the pellet interior to the cold surface. The moisture is evaporated as the pellet temperature reaches atmosphere.

Of the two designs available, one is the vertical column cooler in which the pellets are moved by gravity through the air stream. The second is the horizontal belt type cooler in which the pellets are carried mechanically through the air stream.

Assuming selection of the proper size to cool the maximum capacity of the pellet mill, which is wanted, a vertical cooler or horizontal cooler?

In my opinion, the factors to be considered are simple. Assuming that

efficiency is equal in both types, I would consider space available for placing the cooler. If floor area is at a premium and headroom is plentiful, then a vertical cooler is indicated. If, however, the ceiling height is such that a vertical cooler cannot be installed, then surely the horizontal unit must be used.

If either one or the other can be used, then let's give some thought to other factors. The horizontal cooler is more flexible and allows a variation in cooling time. It is more adaptable to the cooling of pellets containing high percentages of molasses. The vertical cooler is about 33% lower in initial cost and operating cost.

Generally, if cost is of first importance, a saving in initial expenditure should favor the vertical cooler rather than a reduction in the pellet mill cost beyond realistic requirements.

The cooler sizing will be determined at all times by pellet mill capacity—on the type of formula you will run, and not by pellet mill size. In this area cooler capacity will be calculated on pellet size. A 3/16 in. pellet requires about 8 minutes cooling time. A range pellet, ¾ in. diameter, theoretically, requires 32 minutes cooling time. This is based on the relative time for heat to transfer 3/32 in. to pellet surface on 3/16 in. pellets and 12/32 in. on ¾ in. pellets. If both sizes are produced, and the 32 minutes of cooling time can be justified, it would mean serious shrinkage in weight of the 3/16 in. pellets.

Thus, from a practical point of view, the cooler sizing should be based on 16 minutes where both large and small pellets are produced. The ¾ in. pellets will be cooled to the "safe point" and final cooling and conditioning will take place in the sack or in open bin storage.

Crumblizing Pellets

The crumblizing of pellets is an economical substitute for the expensize 3/32 in. pellet. Crumblizing is the actual milling process as used for wheat and corn. The feed mill attempts to do in one operation what the wheat and corn miller does in from 6 to 10. The one-break system of crumblizing consists of a single stand roll with a 10 LePage cut. In keeping with standard milling practice, any roll longer than 36 in. should be 8 in. in diameter. This is to safeguard against roll whip, resultant excess wear and poor quality crumbles. The one-break system at best produces from 20% to 25% fines which must be re-pelleted.

Plants now using a two-break system are producing higher quality crumbles with fines at the 10-12½% level. Dollarwise, the second crumble roll is an excellent investment.

In actual use the first break will screen out 40% finished product, 7½% fines, the remainder oversize to a second roll which will finish and produce about 7½% fines. The same screen for sizing is used.

The last operation is the removal of fine particles from the pellets or the dust from crumbles. There is a choice of a "scalping shoe" or "shaker screen," and a rotary type sifter. The shaker is adequate at capacities up to 10 ton hour. For more than that tonnage, the rotary sifter should be used as it provides higher capacities with lower screen area.

Cost, again, is a factor as the rotary sifter will run about 80% over that of the shaker. The sifter with a more violent action will at times increase fines, however the point is debatable.

How much will a complete pelleting unit cost installed? Assume that 440 volt power will be used, that all electrical equipment will be Nema 5 and that all motors and starters will be included.

For 5 ton hourly capacity on low fiber feeds:

1—Pellet mill	$7,218
1—Cooler (vertical)	$2,651
1—Crumbler	$1,532
1—Shaker	$1,117
1—Boiler	$2,620
Misc. costs	$5,000
Total	$20,138

If horizontal cooler is used, add $1,100. This unit provides for molasses mixing at the pellet mill.

For 10 ton per hour capacity providing for molasses mixing at the pellet mill and all electrical and installation costs:

1—Pellet mill	$11,276
1—Cooler (vertical)	$ 3,235
1—Crumbler	$ 3,146
1—Shaker	$ 1,846
1—Boiler	$ 4,340
Misc. costs	$ 7,000
Total	$30,843

For horizontal cooler, add $1,400.

These figures represent actual equipment costs today. Figures used for installation and miscellaneous costs are only fair estimates for single units.

Actual engineering and installation of the equipment are dependent on the individual case. To generalize is simple but not entirely effective. The following general rules dictated by experience can, however, be suggested:

● Wherever possible, gravity should be employed in handling hot pellets. This means that the pellet mill should be installed above the cooler. If this is not possible, the Venturi type air system should be used to elevate hot pellets to the cooler.

● If the cooler is below the pellet mill, then the crumbler should be installed under the cooler. The cold pellets or crumbles can then be elevated by a bucket type elevator to a shaker or sifter. Fines then may be returned to the pellet mill feeder for re-pelleting by gravity. Finished pellets or crumbles can be moved by gravity to sack or bulk bins. This needs the elevation of from 2 to 3 floors with a total headroom of 36 ft.

● With a single floor with 12-16 ft. headroom available, use of the Venturi type air system is recommended to handle hot pellets from pellet mill to cooler, with crumbler mounted under cooler and bucket elevator for dry pellets to shaker or sifter—then from shaker or sifter to sacking or bulk bins.

You will, of course, note that the multiple floor installation using gravity wherever possible is the most effective and lowest in cost.

Placing the crumbler immediately under the cooler permits the cooler gate to act as a roll feeder. If hot pellets must be elevated from the pellet mill use an air system. If an air system is indicated, use the Venturi type as the air from the cooler can be used to supply the transportation. Experience proves that this principle is most efficient and creates a minimum of fines and little or no wear on duct work.

I will suggest to anybody considering a pellet mill installation that the only consideration be based on your required objective. Tailor the installation to provide the most flexible and efficient operation for the individual plant. Stereotyped planning should be avoided in order to save initial costs. Good, reliable engineering and planning are available for the mere asking.

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Poultrymen Must Make Products More Appealing, Feed Men Told at Rutgers

By RUSSELL STANTON
Rutgers University

NEW BRUNSWICK — Poultrymen must find new ways of making their products appealing to consumers in the opinion of Dr. J. Clyde Driggers, head of the poultry department at the University of Georgia.

As a general rule, farmers have a long way to go in promoting the sale of eggs and meat, Dr. Driggers said in a talk before salesmen and servicemen from the feed and allied industries at Rutgers University recently.

Nearly everybody in the poultry business is doing the marketing job about as it was done in the '20's, the speaker charged, in contrast with the fact that at least 50% of the present products of industry were not sold 20 years ago.

Dr. Driggers filled in for Arthur Gannon, extension poultry specialist at the University of Georgia, who had to cancel his appearance because of illness. Program planners for the annual one-day school for salesmen and servicemen sought a speaker from the heart of the Southeast's expanded poultry industry in an effort to understand how the future of New Jersey's poultrymen may be affected.

Since 1934, the increase of broiler production in Georgia alone has been in the order of 65,000%, Dr. Driggers said, "with just about the same increase in the number of problems."

He drew some contrasts between 1934 and now. Broiler growers then in business thought they were doing a reasonably good job when they produced a 3-lb. bird in 14 weeks on 4-5 lb. of feed per pound of weight.

Today, Georgia poultrymen are turning out 3½-lb. broilers in 9 weeks on 2-3 lb. of feed to a pound of meat, "in spite of poor managerial practices."

Egg production per bird has gone up from 100 to 195 or 198 average, he said.

Efficiency of production in Georgia means getting 240 eggs per bird in a year, or a dozen with 4½ lb. of feed and 5 minutes of labor. The goal for labor return is $1 a year per bird.

In this set-up, Dr. Driggers pointed out, there is no room for wasted feed or poor production caused by improper ventilation. He denied the existence of "automatic" equipment. There is mechanical equipment, he said, "but the poultryman still must be there ready to take care of it and adjust it."

Georgia poultrymen can get by on a lower income than poultrymen in other areas, and cheap housing—50¢ a square foot—helps them reduce disease and other problems by providing birds 2½-3 sq. ft. of space, he said.

Feed costs are not much lower in the South than they are in the North, according to Irving Lintner, president of the New Jersey Feed Dealers Assn., during an informal panel discussion. Mr. Lintner, who heads Sunrise Milling Corp., Somerville, N.J., figured a differential of 60¢ a ton less in the South because of barge transportation.

He said he was unafraid of the giant industry arising in the Southeast. The answer for the Northeast, he said, is a doubling of production and increased mechanization.

"They haven't got us on the run. Those pole barns of theirs may not stand up. We can beat the pants off them."

Higher taxes, frequently held up as a disadvantage in New Jersey's poultry producing areas, really are an insignificant part of the whole cost of production, in Mr. Lintner's opinion.

Again during the discussion, Mr. Lintner stated that feedmen and others may overlook the fact that some farmers need advice in their financial affairs. They are scared to go to the bank and may be timid about making up a statement of assets and liabilities if they need a loan.

The "boogy of urbanization that bothers some farmers in New Jersey," also left Mr. Lintner undaunted. Effects of city people moving to the country are not as black as they seem, he said. Rising real estate costs have helped a lot of poultrymen directly, so that they could get higher prices. Others have baled themselves out by selling, and a farmer who sells out can easily establish a modern farm on new land, he noted.

John C. Taylor, veteran poultry extension specialist at Rutgers, saw no substitute for skilled management in his talk, "Facts vs. Fiction." He emphasized the sureness of variations in working with living things. Mr. Taylor presented a guide for commercial egg production based on figures from the New Jersey random sample egg laying test.

For example, in the contest, all birds are the same age, while on the farm they may be mixed, he noted. The same worker cares for test birds, but different workers tend birds on commercial farms. Ventilation is constant in the test pens but variable on the farm. One ration is fed to test birds but different rations to birds on the farm, he said.

Samuel Garrison, agricultural economist with the Rural Advisory Council, New Jersey Department of Agriculture, commenting on social and economic changes affecting New Jersey agriculture, said ways must be studied to make agriculture profitable in its change from extensive to intensive methods.

Ways must be sought also to reduce rural-urban conflicts, he said. The city family attracted to the country by certain utopian ideas of what rural life should be often is disenchanted by a warm summer breeze that brings a characteristic poultry farm odor, he noted.

The Rutgers poultry science department has a poultry disease institute on Jan. 14 and a poultry nutrition institute on March 29.

OFFICERS—Officers elected at the 10th annual convention of the Arkansas Turkey Federation are shown (left to right): Gene George, George's Feed Co., Springdale, president; Lowell Lankford, General Mills, Inc., Little Rock, secretary; Roy Ritter, Red Comb Feeds, Springdale, retiring president, and John Haid, Siloam Springs, treasurer of the Arkansas Turkey Federation and new secretary of the Arkansas Poultry Federation.

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CHARLES CITY, IOWA—Dr. J. E. Salsbury, president and founder of Dr. Salsbury's Laboratories, was presented with the annual recognition award by 4-H club members here. The award was based on Dr. Salsbury's donation of bleachers used at the fairgrounds, a new building for 4-H girls' activities and the Salsbury Baptist Home for the Aged, dedicated this year.

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Enzyme Supplementation of Barley Diets for Laying Hens

● L. R. Berg, Western Washington Experiment Station; Poultry Science, Vol. 38, No. 5, pp. 1132-1139, September, 1959.

ABSTRACT

Two experiments were conducted during 1957 to evaluate the water treatment of barley, addition of various enzymes or addition of part malting grade barley to rations for laying hens.

The first experiment was conducted with seven-month-old White Leghorn pullets, part of which were distributed into four groups of 50 birds each in group cages, with the remainder divided into four groups of 18 birds each, and kept in individual cages.

The ration used consisted of: Ground grain, 77.8%; fish meal, 2.5%; meat and bone scrap, 5%; soybean oil meal, 7%; dehydrated grass, 3%; limestone, 3.2%; steamed bone meal, 1.2%; salt, .3%; plus added vitamins A, D_3 and riboflavin; procaine penicillin; manganese sulfate and potassium iodide. Yellow corn, barley and water-treated barley were compared as the grain portion of the ration when fed to one lot each in both group caged and individually caged birds. Water-treated barley was prepared by soaking ground barley with tap water at a ratio of 0.75 part of water to 1 part of barley by weight for approximately 16 hours. The moist barley was then spread out on paper, dried in a forced draft oven at a temperature of about 70°C. and then reground through a hammer mill. The effect of adding a fungal enzyme at a rate of 2 gm. of the enzyme per pound of feed was also determined.

The results showed that, based on averages, no marked difference in rate of lay was demonstrated between the various dietary treatments. Much variation of rate of lay occurred, but it was largely group and cage variation rather than one due to treatment effects. Birds fed the corn ration produced one dozen eggs on 4 lb. feed, while those on the regular barley diet required 4.48 lb. feed to produce a dozen eggs. Adding the enzyme to the barley ration reduced the feed requirement to 4.38 lb. It was shown that this was accounted for by a 2.3% greater rate of lay and did not represent a reduced feed intake, as was the case for the better feed efficiency with the corn ration. Water treatment of the barley increased feed efficiency from 4.48 lb. to 4.39 lb. even though the production rate was 0.6% lower.

It is also interesting to note that feeding the corn ration during the 196-day test period increased body weight around one fourth pound. Barley fed birds gained only .02 lb. during the same period, while those on either the water treated barley or fed enzyme treated barley gained 0.10 lb. It should be noted that the group fed birds fed the various barley diets gained better than those individually caged—likely due to the fact that group birds probably have a more "common" environment.

In the second experiment, also utilizing strain cross White Leghorn pullets and involving a total of 1,386 29-week-old birds, 18 randomly distributed groups were formed and housed in similar 10 by 20-ft. floor pens all located in the same house. For eight weeks prior to the test, all the birds were fed the same common laying ration composed of 35% corn and 41.9% barley as the grain portion. The experimental basal ration used in trial II was quite similar to that previously given for trial I. Six different rations were compared by being fed randomly to three groups. Fungal (2 gm. per pound of feed) and bacterial (1 lb. per ton of feed) enzymes were added at the expense of the entire ration, while 2.5% malting barley replaced an equal weight of regular barley.

This test was continued for six 28-day periods, with four breeding males introduced into the pens after the first eight weeks, and then rotated among the pens twice weekly for two weeks. Then, eggs laid on two consecutive days were incubated and fertility and hatch of eggs were determined. Egg quality factors were also observed during the experiment.

Results of the second experiment showed no significant differences in rate of lay, percent of mortality (without culling), percent of hatch of fertile eggs, egg quality factors as measured by Haugh units, specific gravity or percent blood spots. Although statistical analysis showed no difference in rate of lay, inspection of the figures showed that corn, fungal enzyme, malt barley and malt barley plus fungal enzyme fed birds laid at approximately equal rates, with ordinary barley and bacterial enzyme supplemented birds producing

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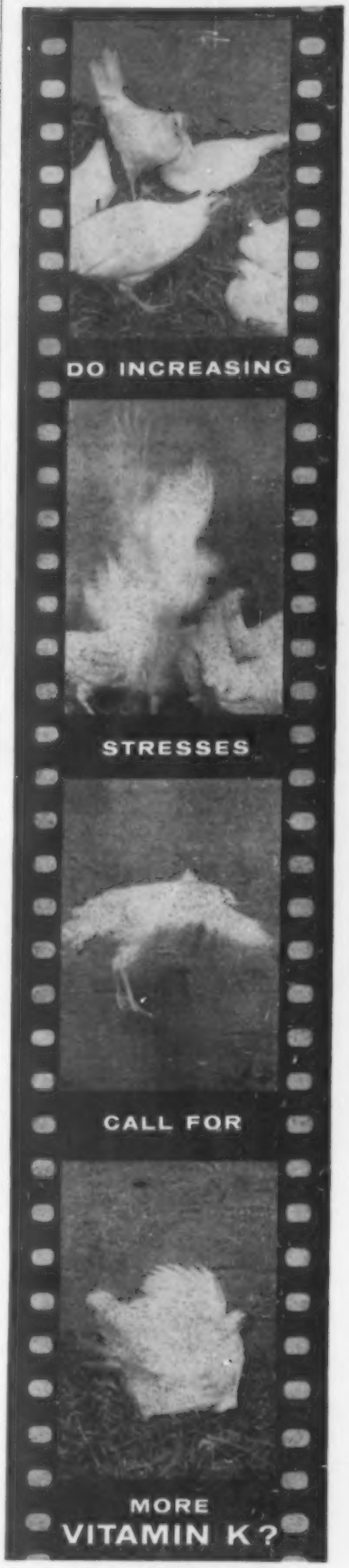

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at a slightly lower rate. None of the enzyme treatments or substitution of 2.5% malt barley for ordinary barley improved feed efficiency over the barley ration. The corn ration was significantly better in feed conversion (3.86 vs. range of 4.22-4.34 lb. feed per dozen eggs). If anything, the enzymes actually increased feed consumption slightly, and thus lowered feed efficiency slightly when compared with the plain barley diet.

Birds fed on corn also gained significantly more body weight—approximately 0.2 lb., plus or minus. Although cornfed birds hatched 91.1% of fertile eggs vs. a better than 95% hatch rate for the birds on the various barley diets, the difference was non-significant, although it might be of practical significance. No effect of enzymes on hatchability was noted.

Those birds fed barley diets tended to lay slightly smaller eggs than those on corn rations, but not significantly so. Also, enzymes caused no significant differences in egg size, but they tended to promote a slightly larger egg size. It is interesting to observe that the litter moisture was less in corn fed birds during the May observation, with the difference due to less water consumption by these birds. Enzymes did not affect water consumption in this observation, but the use of the fungal enzyme promoted a better litter than in the other barley-fed pens—but not quite as good as when corn was used in the diet.

During a later observation of litter conditions in August, the corn fed birds again drank less water, with the birds fed fungal enzyme supplemented barley diets consuming less water than the other barley fed groups, and no more than those on corn. Malt barley in the diet resulted in increased water intake. In spite of these differences in water consumption, very little difference was found between litter moisture in the pens after a relatively long, hot, dry period of weather. Visual score showed that the litter in pens of birds on both the unsupplemented barley and the barley diet with 2.5% malt barley was in poorer condition when compared with the other pens.

Since the various enzymes used in this test did not appear to benefit either rate of lay or increase feed efficiency to any extent quite early in the experiment, a test was also conducted with chicks to check whether or not the enzymes were capable of stimulating growth and feed efficiency in young chicks fed barley based rations. Responses typical of such additions to chick diets were shown by increased growth and better feed efficiency — therefore, the preparations were judged to be active.

COMMENT

This work was first reported at the 1958 Poultry Science Assn. meeting, but this article gives many further details. Although there have been some favorable reports from Utah and Wyoming (1958) of the use of enzymes and soaking barley for use in laying hen diets, this work emphasizes the need for careful evaluation of all feed additives and/or new methods of processing. The Wyoming workers showed that adding 1 gm. of a mixture of amylases per pound of feed resulted in a significant increase in hatchability over barley or soaked barley diets. The enzyme group also had the highest production and most efficient feed utilization in cages, while both water soaked and enzyme supplemented rations resulted in superior results over barley diets in floor pens.

Although use of enzymes and/or treatment of barley based rations is subject to much further exploration, it definitely appears that most use will be restricted to western type barley based rations, and more particularly to barley based growing and starting diets—such as chick and broiler rations, poult rations and possibly pig starters. More work with both chickens and turkeys is needed to establish how long such enzymes and treatments may be used effectively, since much work indicates that they are likely most effective at very young ages, with only small differences visible later. The limit of effective use in chickens and turkeys may well prove to be about 12-14 weeks of age, but this point is largely unsubstantiated by research.

Supply Firm Adds 2

GAINESVILLE, GA. — Henry W. Newton and Doyle H. Bond, both of Athens, have joined the staff of H. Steele, Inc., mill machinery and bulk truck supply firm here.

Mr. Bond, who operated his own feed mill in north Florida before accepting his new position, will serve a northeast Georgia territory in the mill supplies division of the company.

Mr. Newton, who will be sales manager, was associated with S. Howes Co. before joining Steele. For the last 20 years, he had worked in the mill machinery business in Pennsylvania, Texas and Tennessee.

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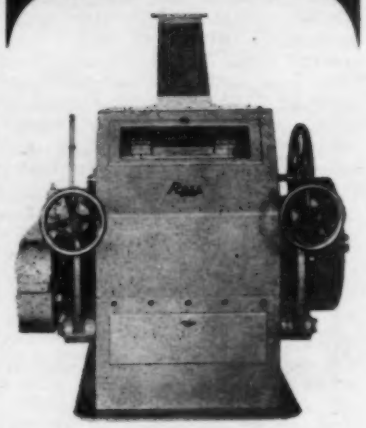

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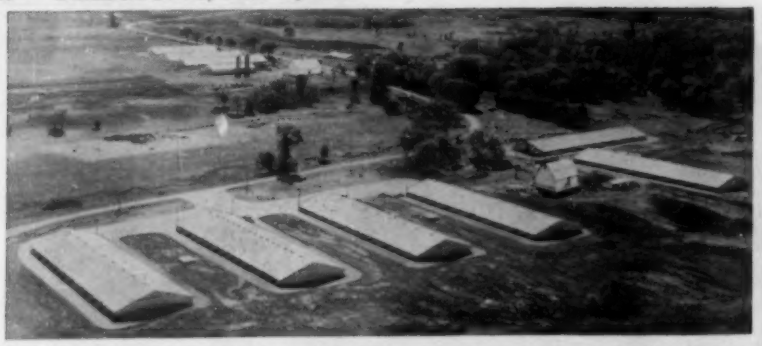
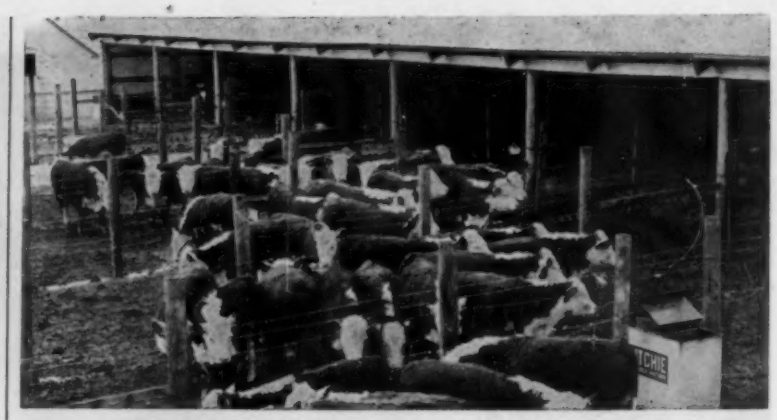


RESEARCH, DEMONSTRATION FARM—The new research and demonstration farm of Doughboy Industries' formula feed division, New Richmond, Wis., looks like this from the air. Each of the buildings in the foreground has a capacity of 25,000 broilers. Buildings in the background house beef cattle, turkeys, layers and hogs. Guided tours may be arranged.



BEEF CATTLE SETUP—Shown here are the beef barn and pens of cattle on experimental rations.

Doughboy of Wisconsin Opens Research, Demonstration Farm

A new research and demonstration farm, described as one of the largest units of its kind in the nation, has been put into operation by Doughboy Industries, New Richmond, Wis.

E. J. Cashman

The new facilities, on a 680-acre farm near New Richmond, are an integral part of the company's development work on feeds and feeding programs, officials said.

L. M. Henderson

Robert Ahlin

Edwin J. Cashman, president of Doughboy, said the farm embraces one of the largest operations of its kind in the U.S. "This farm differs from most experimental enterprises in that all work is done on a volume basis," he said. "From it we will learn better methods of housing, ventilation, feeding formulas and management practices."

Mr. Cashman also said that operation of the new facilities is coordinated with new improvements at the Doughboy feed plant; these include a substantial increase in bulk storage space.

Farm's Facilities

The farm's research facilities include: broiler houses with capacity for growing 750,000 broilers a year; housing and equipment capable of keeping 6,000 layers on test at all times; facilities for studying approximately 30,000 turkeys annually; a building for "assembly line" production of 700 hogs a year, and a herd of 300 beef animals.

Mr. Cashman said the farm is geared to practical methods of production that can be practiced on the average good farm. "The mass experimental runs," he said, "are of great concern to future farming, for it is now well known that successful farming will be in the hands of those who do the most efficient job. As we learn new and better methods of mass food production, we will pass the information on to farmers and others in the agricultural field."

Robert Ahlin, director of nutrition and research, explained Doughboy's "practical research" approach: "We have provided facilities which we believe are practical and necessary for the average farmer. And we have adapted our research to those facilities. This farm and the programs being carried on will give us feeding results we know can be duplicated in the field."

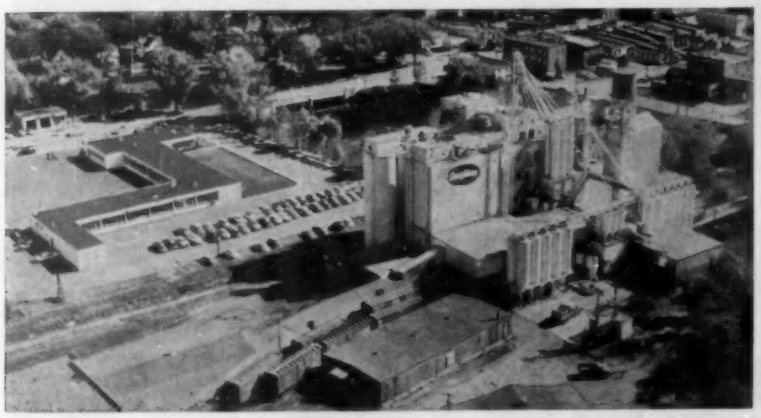
Laton M. Henderson, vice president of Doughboy's feed division, declared that "the increased numbers of poultry and livestock now being tested at the farm enable Doughboy to do even more complete and accurate analysis of feeds and feeding methods and to obtain results more quickly than ever before."

Most of the 11 new buildings are of pole-type construction. Broiler houses are the largest—292 ft. by 76 ft. All are versatile in design so that pens, nests, feeding and watering equipment inside can be rearranged to meet specific conditions of various experiments. Most of the buildings are insulated and air conditioned for both cold and warm weather.

FARROWING UNIT—Suckling pigs and sow are confined in units like this one in swine building on Doughboy farm. Records are kept on pigs from birth to marketing.

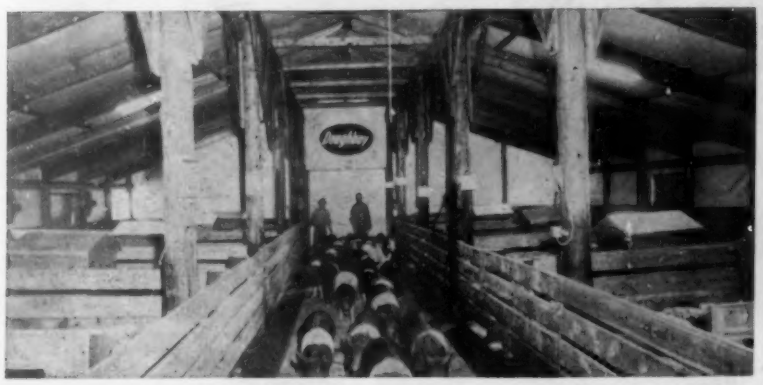
Doughboy officials say they believe the research farm's broiler unit is the largest of its kind in the U.S. Each of the six buildings has room for 25,000 birds. Doughboy plans to feed out five flocks of broilers every 50 weeks.

Because of the growing importance



FEED MILL—Improvement in the Doughboy feed plant at New Richmond, Wis., has been coordinated with the company's establishment of a new research and demonstration farm, officials said. Expansion includes the addition of more bulk feed tanks, doubling bulk storage capacity.

TURKEY PROJECT—Because of the importance of the turkey industry in the Upper Midwest, Doughboy maintains at its research and demonstration farm a flock of breeder turkeys in one house and growing turkeys in another. This flock is on range near the new buildings.



HOG BUILDING INTERIOR—Group of growing pigs is herded into swine building, which is divided into sections for farrowing, weaning, growing and finishing. Another section is set off for preparing sows for farrowing and for checking growth progress of pigs.

BROILER CHICKS—Chicks shown here were hatched for Doughboy Industries by cooperating hatcheries. A flock of breeder hens will be maintained and eggs produced by this flock will be hatched elsewhere and returned for growing on Doughboy's new farm.

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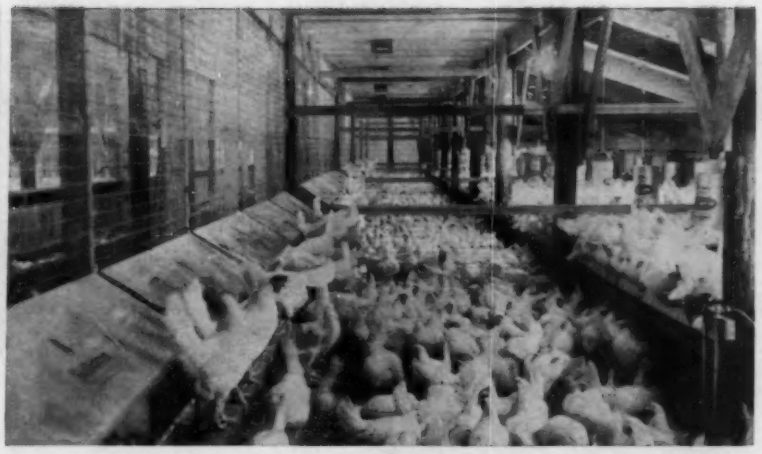


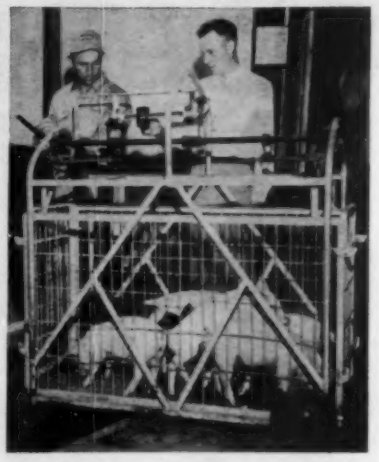
LAYER HOUSE—This is a view of layer house area on new Doughboy research and demonstration farm. Roll-away nests are used. The building also houses a flock of caged birds and a breeder flock.

of the broiler industry in the Upper Midwest, research will give special attention to breeding stock, officials said. A flock of breeder hens will be maintained and eggs produced by this flock will go to hatcheries working with the company. Hatched chicks will come back to the farm. This arrangement, it was pointed out, makes it possible to keep records on the complete life cycle.

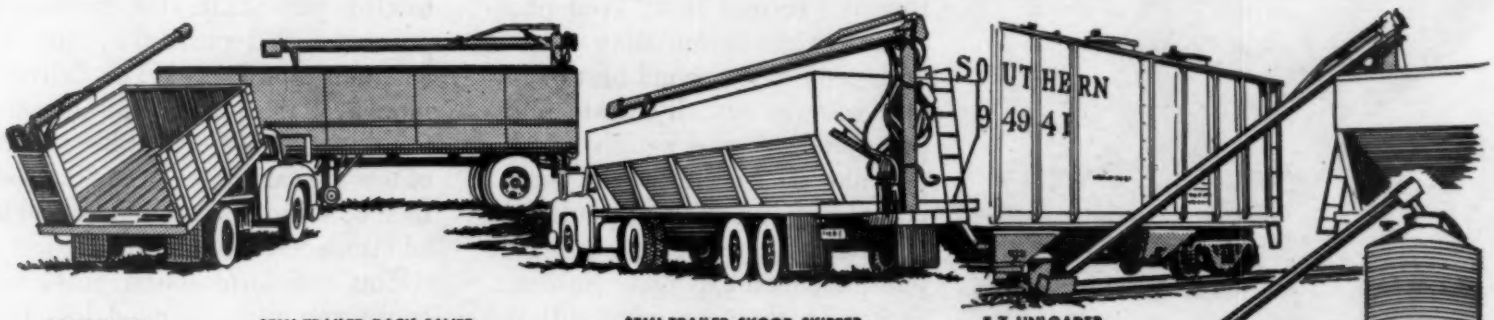
Six thousand layers will be kept on egg laying tests at all times. The commercial laying flock will be split into a large number of pens for various nutritional studies.

Half of the space in the layer house is used for experiments with commercial layers in cage nests. The other half is split into two areas: One with roll-away nests and a flock of commercial layers and the other for a breeding flock.

In the hog building, experiments are under way for continuous studies of feeds, formulas and management methods aimed at producing hogs more efficiently. This building is di-



WEIGHING PIGS—Checking weight of growing pigs are Charles Meath (left), farm manager, and Dr. Herbert Rebhan, nutritionist. Pigs are hand fed and divided into groups for experimental study.



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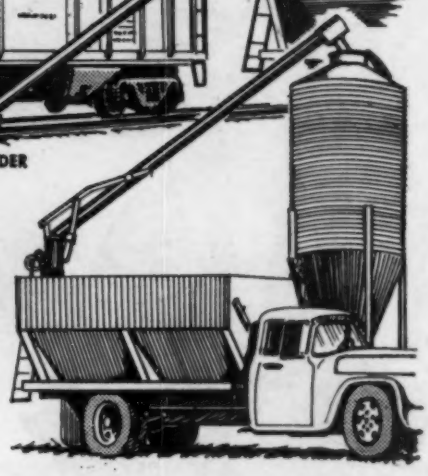

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"As you can imagine from these figures, we count heavily on Stilbosol as a regular part of our cattle feeding business. It is outstanding in its ability to boost gains and cut cost of gain. It would be difficult to feed cattle profitably without using Stilbosol."—**Bob Ruser, Venice, Nebraska.**

"Yes, I remember what I said four years ago. We're as sold as ever . . . actually, even more so. We've fed Stilbosol rations to 2500 steers and 1500 heifers since then. We average about 16% extra gain, and cut cost of gain about 12% by using Stilbosol. We take it for granted now, and count on it."—**Donald Mackay, Mt. Carroll, Illinois.**

From Stilbosol's pioneers: proof of consistent gains on steers and heifers

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—**H. E. Benson, State Center, Iowa.**

"We've fed Stilbosol-fortified supplements to about 5,000 head since late 1954 . . . steers and heifers. We don't question Stilbosol any more—we just count on it! We expect at least 15% extra daily gain at 10% lower cost from Stilbosol. We get it, too. Anything that consistently cuts cost and increases gain like Stilbosol is here to stay for a long time."—**Lyle Smith, Nevada, Iowa.**

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"We average 16% extra gain, cut costs by about 12% with Stilbosol." . . . . . Donald Mackay

"Stilbosol consistently cuts costs and increases gain. We count on it!" . . . . . Lyle D Smith

"Stilbosol gave us an extra ¼ pound daily gain on 100,000 cattle." . . . . . R L Ruser

"My Stilbosol-fed steers and heifers gained faster, finished out finer. My buyers like them!" . . . . . H E Benson

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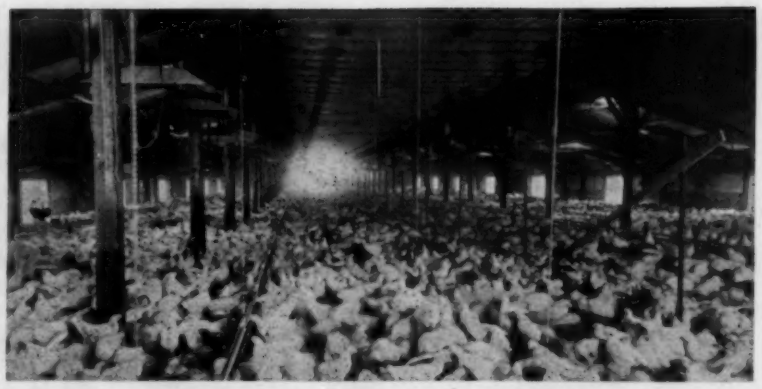

INSIDE BROILER HOUSE—Emphasis on lighting, heating, ventilation and sanitation is evident here inside one of six broiler houses at the Doughboy research and demonstration farm. Each of the houses has a capacity of 25,000 broilers, and the birds are divided into pens for nutritional studies and other research.

vided into areas for farrowing, weaning, and growing and finishing.

More than 700 hogs will go through the building each year, and research methods are designed for keeping records on each animal. All pens are hand fed.

Doughboy has a breeder flock of turkeys which is divided into separate groups for experimental work. Each group is fed a different formula and complete separate records are maintained. As in the broiler operation, eggs are sent to cooperating hatcheries and records are kept on fertility, hatchability and livability.

When the poults are hatched and placed for raising, another set of records is started. There are also special studies of the birds in the turkey growing facilities which will produce approximately 30,000 turkeys each year.

Beef Cattle Setup

Attention is given also to the raising of beef cattle. A herd of 300 animals will be maintained.

The beef barn which is a part of this project is divided into eight separate pens, each with eight head of cattle. Two silos are built into the shed and the silo unloaders are operated by push button control. There are feeders at the edge of each pen and the feed bunk can be reached easily from the alleyway.

Experiments include evaluation of feeds, formulas and feed additives. Each pen of steers is on a different feed formula. Steers come into the Doughboy farm's pens at about 600 lb. and go to market at about 1,000 lb.

Eventually, said Doughboy officials, the research and demonstration farm will have its own brood cow herd.

Guided tours around the farm are being conducted by Doughboy to show how farmers can adapt production methods in operation on the big research and demonstration farm to family farm operations and present farm facilities.

Farmers, dealers and other guests are brought to the farm in chartered buses. The touring groups are guided by Mr. Ahlin; Dr. Herbert Rebhan, nutritionist; Art Greenlee, swine specialist, and Russell Solheim, dairy and beef specialist. Tours include the Doughboy feed plant at New Richmond and the feed division's laboratory, as well as the research farm.

Arrangements for the guided tours —a program called "Operation Research"—are being made in the Upper Midwest territory served by Doughboy's formula feed division by the company's dealers and salesmen.

The new farm will be dedicated officially in January.

CAGED LAYERS—Records on egg production are checked by Doughboy staff member in cage area of layer house.

Merck Sales, Income Show Increases

RAHWAY, N.J.—Sales of Merck & Co., Inc., and subsidiaries for the first nine months of 1959 totaled $166,934,000, an increase of 8% over the $153,896,000 reported for the first nine months of 1958, John T. Connor, president, has announced.

Net income increased 13%, amounting to $23,931,000, equal to $2.23 a share for the 1959 period, compared with $21,108,000 or $2.03 a share in 1958.

Third quarter sales were $56,147,000, compared with $52,404,000 in the third quarter of 1958. Net income for the third quarter of 1959 amounted to $8,084,000, equal to 75¢ a share of common stock, compared with $7,073,000 or 68¢ a common share in the comparable period of 1958.

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T-H MIX is the first packaged premix program on the market that takes a sensible approach to the problem of fortifying feeds. Thompson-Hayward has set up a suggested feed program to be used in conjunction with T-H MIXES. This feed program outlines several different combinations of ingredients from which you may choose when mixing your feeds with a T-H MIX. The result is customized feed formulation without costly, unnecessary over-fortification or duplication of additives.

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Realizing there is no one standardized feed program just right for every feed manufacturer, the new T-H feed program lets you select from one of several different combinations of ingredients. This way you choose the feed program that is "customized" for your particular needs—yet you pay not a penny more!

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T-H MIXES contain all necessary ingredients — without costly, unnecessary duplication or over-fortification. Each additive has been carefully selected by our nutritional staff after a complete review of all available research. In addition, each additive has been subjected to thorough testing in our quality control laboratory. You get only the additives that sensibly belong in a premix.

IT IS ECONOMICAL

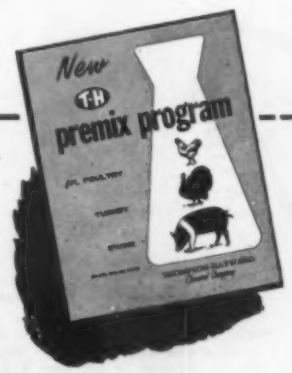
You buy only the T-H MIXES which you need — in any amounts and in any combination of premixes. The new T-H Premix Program eliminates piecemeal ordering, waste, unbalanced inventories and the chance of error in mixing.

IT IS SIMPLE

There is no guesswork or waste involved in mixing. You just select the one T-H feed program that is "customized" for your particular needs, and your work is done.

IT IS EASY TO REORDER

With Thompson-Hayward's many conveniently located warehouses, your T-H MIX orders are serviced and delivered promptly—there's no waiting!



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The T-H Premix Programs for poultry, turkey and swine are described in these schedules in this free Brochure. The additives used in each of the new T-H MIXES are listed. A complete breakdown of the type and amount of each ingredient used in the T-H feeding programs is also included. Discover how the new T-H Premix Program can increase feed sales and profits for you. Fill out coupon and mail it to Thompson-Hayward Chemical Company, 2915 Southwest Blvd., Kansas City 8, Missouri.

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Additive Amendment Discussed At Conference in Washington

WASHINGTON — Various aspects of the food additive amendment to the food and drug law, including certain provisions that affect feeds, were discussed by Food and Drug Administration officials at a recent conference here.

The occasion was the FDA-Food Law Institute conference, which dealt with some of the legal aspects of the law.

Officials pointed out for one thing that "industry should get food additive problems resolved" before the effective date of the food additive amendment regulations in March.

They also noted that a list of trace minerals generally recognized as safe and thus exempt from food additive provisions will be issued soon.

Advice that industry try to get its food additive problems resolved by next March was given by J. K. Kirk, assistant to the commissioner of FDA. March 5, 1960 is the effective date of the food additives amendment to the food and drug law.

"The March 5, 1960, deadline is fast approaching," said Mr. Kirk. "This certainly is an important date. As you know, the law does carry a provision designed to deal with hardship cases, authorizing extension of the effective date up to one year from that date, provided such an extension will present no hazard to the health of the consuming public.

"To me, however, it would seem extremely difficult to conclude that a product or class of products would meet this condition if there is no information available about the toxicity of the items in question. Then, too, even if an exemption is granted, I understand that this is subject to the filing of objection by anyone who believes he will be adversely affected by the exemption.

"Thus, it seems that the best advice we can give now is not to sit back and count on the extension, but that you get your food additive problems resolved—or at least on the way to resolution—before next March."

Trace Mineral List

Mr. Kirk, as part of his talk on direct additives, also mentioned FDA lists of items which are generally recognized as safe. In this connection, he pointed out that FDA is currently working on a list of trace minerals for animal feed which FDA believes are generally recognized as safe. This will be published in the Federal Register.

A discussion of certain aspects of the food additives amendment, regarding tolerances and testing, was part of a talk on "incidental" food additives by Winston B. Rankin, assistant to the FDA commissioner. An incidental additive is defined as one which does not impart a desired quality to the food or serve a functional purpose in it but remains as the result of the use of a chemical in connection with some phase of production, processing or storage. Some animal medications are among the groups of incidental additives.

"The law specifies in considerable detail the procedure whereby a substance not generally recognized as safe—that is, a food additive—may legally become a component of food," Mr. Rankin explained. "Somewhat over-simplified, the procedure is to determine the toxicity of the substance, the amount to be employed or to remain in the food, that the substance accomplishes its intended technical effect, and is otherwise acceptable, and then announce by regulation the conditions under which it may safely be used.

Legal Requirements

"Remembering that we are talking only about additives, substances not generally recognized as safe, it must be apparent that the Food and Drug Administration has no basis for agreeing to any procedure that will allow the use of an additive without compliance with the requirements of the law. If the quantity of the component is so small or the conditions of its use are such that it is generally recognized as safe, then by definition it is not an additive and the clearance procedures are not required.

"The language of the law and its legislative history clearly show that the Congress intended all other materials to be tested and shown safe for their intended use before they are used. The fact that a material of unknown toxicity is present in minute amount is no guarantee of safety. This is true because chemicals do not have the same toxicities. Ten parts per million of added iron or calcium salts

(Turn to page 51)

USING BASIC HOPPER DESIGNS

Lemanco

CAN BUILD EXTRA CAPACITY FROM 20 TO 94 TONS

At 40 Pounds Per Cubic Foot

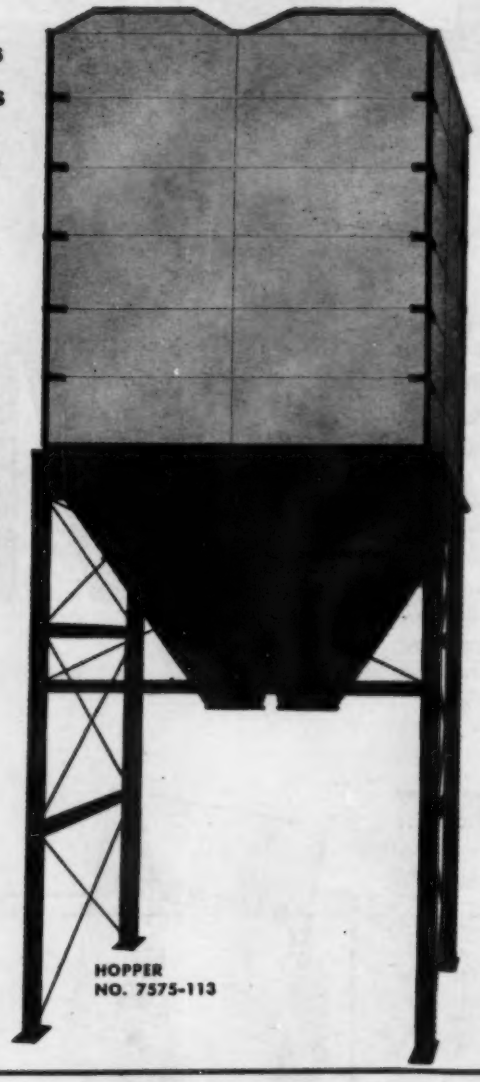
for grains • ingredients
concentrates • finished feeds

The Lemanco system of prefabricating steel BULK STORAGE BINS for inside or outside use is sufficiently flexible that custom planned storage can be offered at mass production prices and delivery. Modular design permits shipment by truck to all points.

The solidly welded base and the Lemanco patented corner holding the side sheets in tension introduces a new concept in the construction of feed storage facilities. Shown are two examples of bin clusters with capacities of 20 tons and 94 tons. These bin clusters are formed by using four hoppers with common wall partition giving four storage compartments.

Lemanco bins are designed for inside or outside storage with models available for side draw or corner draw. This construction permits joining in a straight line as well as shown.

When inquiring about these bins be sure to specify if pneumatic delivery will be used.



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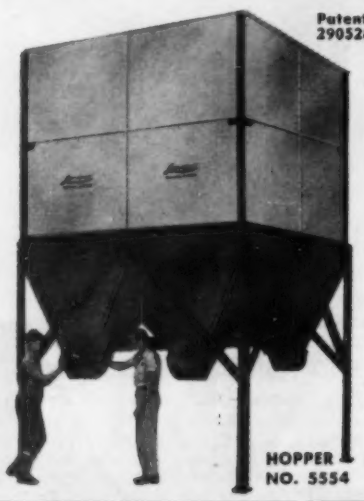

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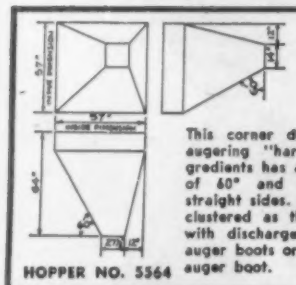

This corner draw hopper for augering "hard-to-handle" ingredients has a minimum pitch of 60° and two practically straight sides. Hoppers can be clustered as the 5554, above, with discharge into individual auger boots or into a common auger boot.

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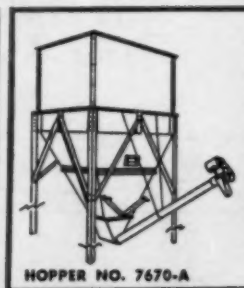

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This general purpose side-draw bin for use with auger or weigh buggy has a capacity of 5¾ tons and a maximum capacity of 8¾ tons with another tier of sides. The bin can be used inside as well as outside. Inverted rotary gates, as shown, permit partitioning. Other type gates also available. The minimum 60° pitch of this hopper makes it useful for many applications. It can also be clustered.

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Tom Letch put aside his editor's cap with a weekly newspaper in a farming community to join the staff of The Miller Publishing Company. His grass roots knowledge of farming and agricultural marketing gives him a practical approach to the problems that may be confronting you.

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This man . . .

And this man . . .

have found the way to reduce disease risk in turkey feeding

They have seen how costly troubles can occur at any time. They have learned that diseases seldom attack singly . . . that a host of other troubles quickly attack birds weakened by disease or stress. Their successful solution to the problem of reducing disease risks through *protective feeding* follows.

"nf-180 pulled us through tight year"

Grower reported: "We couldn't have stood our usual mortality losses this year the way prices were. Using nf-180 kept disease down so we came through with very little trouble. Better feed conversion saved us money and our birds finished out well. Got a top price. Don't believe we could afford to raise turkeys without nf-180. especially in a tight year."

"Finished best flock in years"

This grower's last flock had made poor gains, suffered frequent off-feed periods and disease setbacks. His feed serviceman suggested nf-180 in the feed this year to prevent these troubles. Birds were started on 2 lb. level nf-180 feed and kept on it all through brooding period. Grower liked the size, vigor and livability of his flock so well he decided to continue 2 lb. level on to marketing. "Our death losses were the lowest and finish the best we'd had in years," he said.

"nf-180 gave us trouble-free season"

Turkey broiler grower had 8,000 on 2 lb. level of nf-180 from start to finish. Got to market without any disease troubles. Then put in another 8,000 for regular market. Kept these on 2 lb. level for 14 weeks and dropped to 1 lb. nf-180 per ton on to finishing. This flock just as trouble-free as first one.

"We don't start a

"It's taken care of most everything

Virgil Grigsby, Dover, Del., and his son raise some 30,000 turkeys a year. Five years ago paratyphoid swept through his flock until he was advised to check it with a 2-lb. level of nf-180. "And since then we haven't started a flock without using nf-180 protective feeding," he says. Here are his tape-recorded comments:

"Why did you try nf-180, Mr. Grigsby?"

"In 1954 we started with 14,800 Beltsville turkeys. Then paratyphoid hit and we lost down to 10,000 birds. I was told the only thing on the market that would do any good was a 2-lb. level of nf-180."

"How did it work?"

"We put our remaining 10,000 birds on nf-180 and at

"Best hatchability,

"This past year has been my best since I've been in the turkey business," says R. T. Maddox, Harrisonburg, Va. And he backs it up with profit figures. For example, on one breeder flock of 500 hens, the profit shared by Maddox and his grower totaled $6,756.35. Recently, Mr. Maddox took time off from his regular job at the Rockingham Milling Co., Harrisonburg, to tell his nf-180 protective feeding story. Here's how the conversation went:

"Mr. Maddox, tell us about your turkey breeder operation."

"I have four flocks of 500 breeder hens each. I also grew out about 67,500 birds this year. I hire people to keep them for me."

"Do you medicate the feed your breeder birds receive?"

"Yes, with a low level of nf-180. That's 1 lb. to the ton."

"And you think nf-180 is worthwhile?"

"Well, I've had much better hatchability since using

nf-180 protective

nf-180 (brand of furazolidone) on your feed tag is much, much more than a simple ingredient listing. It becomes an important customer-winning sales tool that goes on to build confidence and a good reputation for your feed . . . the sort of reputation that helps acquire new business.

If you're anxious to insure the turkey feed business you now have . . . and gain new customers, too . . . nf-180 is quite likely what you're looking for. The two reports above are typical of the enthusiasm turkey raisers all over the country have for nf-180 medicated

flock without nf-180"

that's happened to my turkeys."

once they stopped dying. They began to gain again so we kept them on a 1-lb. level from then on."

"You were satisfied with the results?"
"We figured it did an excellent job. And since then we don't start a flock without nf-180. It helps with blackhead, takes care of enteritis . . . in fact, nf-180 has taken care of most everything that's happened to turkeys on this farm."

"How is your feed conversion?"
"We have very good feed conversion. I think that nf-180 helps the birds do all they are capable of doing. If you keep your birds clean inside, they can't help but grow."

best profits ever!" *says R. T. Maddox*

the nf-180, and most of the flocks had better lay than last year. We started out the season at 76% hatchability and our overall average was 69% hatchability for the season."

"How does that compare with flocks which didn't have nf-180?"
"Last year without nf-180 we had a 51% average hatchability."

"Do you think nf-180 gives any other benefits?"
"Yes, I do. It helps considerably to hold down blackhead. In general, it helps control all diseases. That's why I'm using nf-180 in my growing flocks this year, too."

"One last question. Have you ever recommended nf-180 to other people?"
"Yes. If you have something but you don't know what it is, the best thing is to use nf-180. It covers a wider range of diseases than most anything."

feeding can win new customers for you

feeds. nf-180 does more to boost the reputation of your turkey feeds than any other drug. It helps keep customers satisfied...reduces service calls...gives your growers a better chance to produce meat at a profit.

The reason is simple. nf-180 is the only drug that offers such wide-range disease-effectiveness. In fact, it prevents and controls more turkey diseases than any other drug you can use.

What's more, nf-180 is palatable. It stimulates feed intake, improves growth and feed conversion, protects birds against stress. It's safe for birds of all ages, including those highly valuable breeder flocks.

The chart on the next page shows how nf-180 gives your feeds disease-fighting versatility never equalled by antibiotics or other drugs. It also describes how you can set up a simple, effective nf-180 protective feeding program. See for yourself how it can help your customers make more money. See how it can help you make more money, too. Then ask the Hess & Clark representative who calls on you to work out the details of getting started. Or write Hess & Clark, Ashland, Ohio, and we'll see you get fast attention.

nf-180 prevents and controls more turkey diseases than any other drug

Comparison of nf-180 (furazolidone) with other drugs used in turkey feed medication

DRUG	Growth Stimulation	Typhoid & Paratyphoid	Pneumonia	Para-typhoid	C.R.D. Sinusitis	Blue Comb	Hexamitiasis	Synovitis	Ulcerative Enteritis (Quail Disease)	Blackhead	Stress Periods
*nf-180 (furazolidone) Level (grams)	YES 7½-10	YES P-50 T-100	YES P-100 T-200	YES P-50 T-100-200	YES P-50 T-100-200	YES P-50 T-100-200	YES P-100 T-200	YES P-50 T-100-200	YES P-50 T-100-200	YES P-100 T-200	YES P-50 T-100
Chlortetracycline Level (grams)	YES 7-10	NO	NO	NO	YES P-50 T-100	YES P-50 T-100	YES P-50 T-100	YES P-100 T-200	NO	NO	YES P-50 T-100
Oxytetracycline Level (grams)	YES 7-10	NO	NO	NO	YES P-50 T-100	YES P-50 T-100	YES P-50 T-100	YES P-100 T-200	NO	NO	YES 50
Bacitracin Level (grams)	YES 7-10	NO	NO	NO	YES P-50 T-100	YES P-50 T-100	NO	NO	NO	NO	YES P-50 T-100
Penicillin and Streptomycin Level (grams)	YES 2-5 (for penicillin)	NO	NO	NO	YES 75 Strep 25 Pen	YES 75 Strep 25 Pen	YES 75 Strep 25 Pen	NO	NO	NO	NO
Penicillin Level (grams)	YES 2-5	NO	NO	NO	YES T-100	YES T-100	NO	NO	NO	NO	NO
Penicillin and Bacitracin — 37½B plus 12½P Level (grams)	YES 5 Bac 1 Pen	NO	NO	NO	YES P-50	YES P-50	NO	NO	NO	NO	NO
Erythromycin Stearate	NO	NO	NO	NO	P-? T-YES	P-? T-YES	NO	P-? T-YES	NO	NO	NO
2 - Acetylamino 3 - Nitrothiazole	NO	NO	NO	NO	NO	NO	NO	NO	NO	P-YES T-YES	NO
4 - Nitrophenyl Arsonic Acid	NO	NO	NO	NO	NO	NO	NO	NO	NO	P-YES T-NO	NO
A Sulfa—Tin—Arsenical Combination	YES	P - ? T - NO	NO	NO	NO	P-YES T-NO	P-YES T-NO	NO	NO	NO	NO

KEY: P. Prevention level in grams per ton of complete feed
T. Treatment level in grams per ton of complete feed

*Each pound of nf-180 contains 50 grams of furazolidone

Look how easy it is to set up an nf-180 protective feeding program

Right from hatching, turkeys are threatened by diseases and stresses. No matter how ideal the management may be, poults are critically sensitive to stresses which lower their disease resistance. Protective feeding with nf-180 reduces the chance of a serious disease outbreak . . . keeps birds healthy, gaining and profitable. Here are plans that fit your needs:

1. **STARTING PERIOD** . . . use 2-lb. level in all feed from start, through brooding and first week on range.
2. **GROWING-FINISHING PERIOD** . . . check your past history and local disease problems. Choose the protective feeding program you need:
   - 2-lb level continuously should be used to protect against blackhead, hexamitiasis and other diseases.
   - 1-lb. level continuously gives wide protection against stress and many diseases where blackhead and hexamitiasis are not likely problems.
   - week-a-month plan for areas where disease is not a serious problem. Many growers report good luck using a 2-lb. level of nf-180 stress feed one week a month to clean up birds, fight stresses and knock out disease organisms before they can build up and trigger trouble.
3. **BREEDER FLOCKS** . . . as soon as birds are selected put them on a feed with 2 lbs. nf-180 for 2 weeks. Then switch to a feed containing 1 lb. of nf-180 and keep breeders on this level through the laying season. In case of severe stress or disease outbreak, put birds back on the 2-lb. level until the danger has passed.
4. **TO TREAT SPECIFIC DISEASES** . . . use a feed with a 2-4 lb. level of nf-180. Refer to chart above for proper level.

Why take chances with drugs that fight only one or two diseases? Use nf-180, the one drug . . . the only one . . . that offers wide-range effectiveness.

Protect birds—from poults to processor—with nf-180.

HESS & CLARK, Ashland, Ohio
Division of Vick Chemical Company

nf-180® brand of furazolidone

may be insignificant in the diet but this quantity of mercury would have real significance. Nor is the chemical formula of a substance necessarily a reliable guide to its toxicity. While 10 parts per million of urea or of sulfur or of a mixture of the two in the diet might have no effect on man, when sulfur and urea are joined chemically to produce thiourea, we obtain a cancer producer that is not tolerated in food in any concentration.

"The examples could be multiplied many times and the fact that trained pharmacologists can make reliable judgment about the toxicity of some salts on the basis of data obtained on others, sodium and potassium salts of the same acid, for example, do not detract from the significance of the examples cited.

"It is obvious from these facts that the Food and Drug Administration cannot establish for a substance of unknown toxicity a quantity that is regarded as not subject to the food additives amendment. And this fact is not changed by referring to the quantity as 'de minimis non curat lex,' or as the 'pharmacological equivalent of zero' or by any other terminology.

Testing

"I am not trying to say, by any means, that complete lifetime studies of each incidental additive are required, nor that an analytical method is needed for every incidental additive that will detect the last few molecules of it in food. With sufficient toxicity data, our scientists can often suggest the precision and sensitivity of an analytical method to be employed in determining whether residues of the additive occur. If you find residues by this method, then it is obvious that in general the chronic toxicity studies would be required. In many cases, particularly in dealing with packaging materials, it is possible to devise procedures that will determine under exaggerated conditions whether migration of packaging components will occur."

Animal Medications

Mr. Rankin went on to mention that "animal medications have caused some concern."

He said that if a veterinary preparation is not generally recognized as safe in human food, it then becomes important for the person who wishes to promote it to determine whether residues actually occur in the edible products of animals treated with the drug or chemical.

"If a residue may occur," Mr. Rankin said, "then the promoter should show by appropriate long-term studies that it is safe. In particular, it is important to determine whether residues occur in milk. Because milk is the principal item of diet for infants and many invalids, many responsible scientists advocate a very cautious approach to any proposal to sanction any toxic substance in the milk supply . . .

"In the absence of a regulation permitting a residue of a pesticide or food additive in milk, no amount may legally be present. Several studies have shown that penicillin and certain insecticides—particularly DDT—are getting into some market milk. For more than three years we have carried on an intensive educational program with the help of many people including milk producers and users, the U.S. Department of Agriculture, and state agricultural and control agencies, to try to get these substances out of milk. The latest studies show considerable improvement, but they indicate clearly that education alone is not going to stop the improper use by farmers of agricultural sprays and penicillin-containing mastitis treatments. We are now engaged in an enforcement program to get penicillin and insecticides out of the interstate milk supply.

"It may be well to point out in connection with our discussion of additives in feeds that research institutions should be careful to see that foods derived from animals used in test programs are not placed on the commercial market if they have residues that are unsafe or forbidden by the pure food laws."

Trace mineral compounds offered as nutrients have been studied critically, and FDA plans to make sure that unsafe levels are not prescribed for feeds or foods, said Dr. O. L. Kline of FDA's division of nutrition.

Comments on trace minerals and their exemption from the food additive amendment were included in a talk by Dr. Kline on nutritional considerations in the use of food additives.

"Most animal feeds and many food supplements offered for human use contain a variety of compounds generally classified as trace minerals," he pointed out. "In most instances, the amounts of these compounds known to be hazardous have been determined.

"In any publication of a list of trace mineral compounds proposed as exempt from the requirements of the Food Additive Amendment a maximum limit for safe use will be provided. It may be undesirable to include in such a list those trace minerals for which the range between the nutritive value and the toxic level is relatively narrow. For example, molybdenum is known to play the role of co-factor in the enzyme xanthine oxidase, important in the metabolic processes in animal tissues. However, excessive intakes of molybdenum compounds are known to inhibit the absorption of copper and thus disarrange the normal metabolic pattern. In certain areas of Florida, the toxic effect of forage crops containing excessive molybdenum has been observed, but is overcome by the addition of copper to the feed of affected animals.

"Selenium has been shown to be a nutrient for animals, and at least one report indicates that it may be of some significance in practical animal husbandry. Nevertheless, under the great majority of practical conditions, the addition of selenium compounds to animal feeds is not necessary. Even though the margin of toxic level to nutrient level of selenium is one hundred to one, the toxic level may be reached easily as indicated by selenium poisoning in certain sections of the Great Plains area of this country.

"We have studied critically the experimental data relating to the trace mineral compounds offered as nutrients, and propose to make certain that unsafe levels are not prescribed for feeds or food."

"Good Law"

The food additives amendment is still in the "shakedown period," but it represents a practical approach to the control of food additives, said George P. Larrick, commissioner of food and drugs.

"We have good laws on the statute books to regulate the use of chemicals in food products," Mr. Larrick told the conference. "The pesticide chemicals amendment of 1954 and the food additives amendment of 1958

(Turn to AMENDMENT, page 54)

"...Selected as the best was GRACE *Micro Prilled* UREA FEED COMPOUND"

Micro-Prills shown 12 times actual size. The smooth round balls flow freely, don't cake.

Lehman Keith *(at right in photo)*, owner of Hermitage Mill, Nashville, Tennessee, speaks with the voice of experience when he talks about Grace Micro-Prilled Urea Feed Compound:

"During the development of our new 54% protein concentrate, it was necessary to use the very best material available. After trying several brands of urea, selected as the best was Grace Micro-Prilled Urea Feed Compound. Its free-flowing qualities and uniform size allowed us to attain the even distribution necessary in our product without fear of separation. We have been able to store Grace Micro-Prills for some time without caking. Also, we are grateful to the Grace technical people for the assistance they gave us in the development of this new concentrate."

When *you* use an urea feed compound, you will find it pays to select the Grace brand. Its exclusive Micro-Prilling makes it truly free-flowing, assures an even, uniform mix throughout. See for yourself the difference Micro-Prilling makes.

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If you are now combining two or more ingredients in any kind of formula or batch, write now for this new *free* automatic batching handbook. It describes in detail how automatic batching works, how to convert existing plant facilities or plan new plants for automatic operation. It illustrates the latest batching systems available, lets you select the right type for your particular needs. Also shows you how to combine materials handling equipment, storage facilities, and weighing equipment for greatest economy, increased production. This is the newest, most complete handbook on automatic batching available—be sure to write for your free copy today!

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MAIN BUSINESS—Mitchell's Feed, Seed & Hatchery was at one time a leading hatchery in Decatur, but the firm's main business now is in feed.

Alabama Dealer Builds Business with Mobile Feed Mills, Pilot Feeding Projects

By Jess Blair
Feedstuffs Special Writer

A. N. Mitchell of Decatur, Ala., has increased his sales volume from a total of only $22,000 in 1945 to one sufficiently high to take care of 12 employees by 1959.

It was done by following three principles—catering to the diversified farmers, serving them with mobile feed mills and using pilot operations to show customers how to make money by feeding hogs and poultry.

His firm, Mitchell Feed, Seed & Hatchery, once did a good business with custom hatching. But that was before poultry integration swept the area. Now he has let this business go to the big commercial hatcheries, and concentrates on feeds and farm supplies.

Mobile Mill

"In wondering what to do after contract feeding took over everything," he said, "I got to thinking about those farmers left out of it. We have 6,000 farm families here in Morgan County and someone needed to work with them—to help them find ways of surviving. I decided a mobile feed mill would be worthwhile—so we bought one."

That was in 1954, and it did so well that he added a second one in 1955, then bought the third unit the next year. Since then the three have been kept busy serving farm routes five days a week. These routes have been extended until they reach into three different counties.

"Advertising really pays off with these mills," said Mr. Mitchell. "I plug them over our regular radio programs and point out the advantages."

In a recent program he outlined 11 advantages farmers gain by having their feed ground and mixed by the Mitchell mills. These included such things as getting fresh feed on schedule, no loading or hauling to town, no extra labor or truck expense, free delivery with supplements, liquid molasses perfectly blended, expertly formulated rations and on-the-spot management help. He also pointed out that the farm manager would lose no time and would avoid road hazards coming to town with the feed. These points were also stressed in newspaper advertising.

The mills mix enough feed to last the farmer from one to two weeks. Two men are assigned to each truck, then on Saturday the trucks are brought back to the store. This day is set aside for industrial workers who live on small farms or acreages. They bring their feed to the mills, or if there is sufficient volume, the mills are driven to their homesteads.

Farmers who order larger quantities of feed or supplies can have it delivered by the company's three delivery trucks. The mobile feed units have a molasses tank and blender and also carry along other supplements.

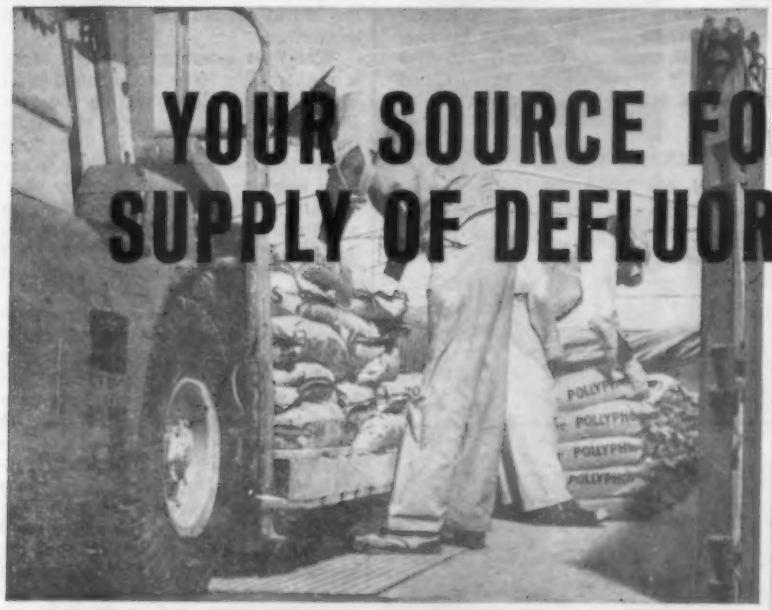
"The only way to make a mobile mill pay off," said Mr. Mitchell, "is to work those routes for all they're worth. This means selling as well as grinding and mixing."

Weekly Contacts

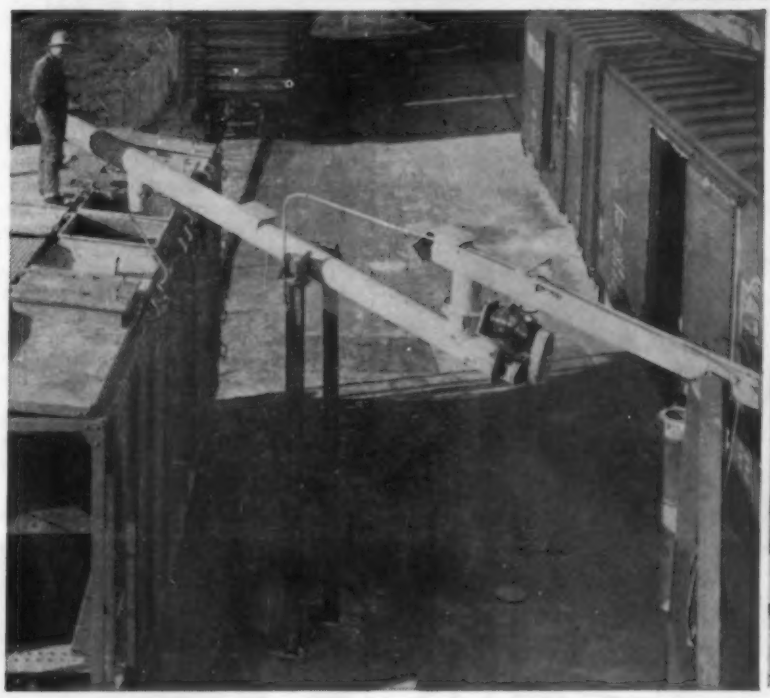
These weekly contacts have resulted in sales of other kinds. Mr. Mitchell is now selling about 500 tons of fertilizer a year, a large quanti-

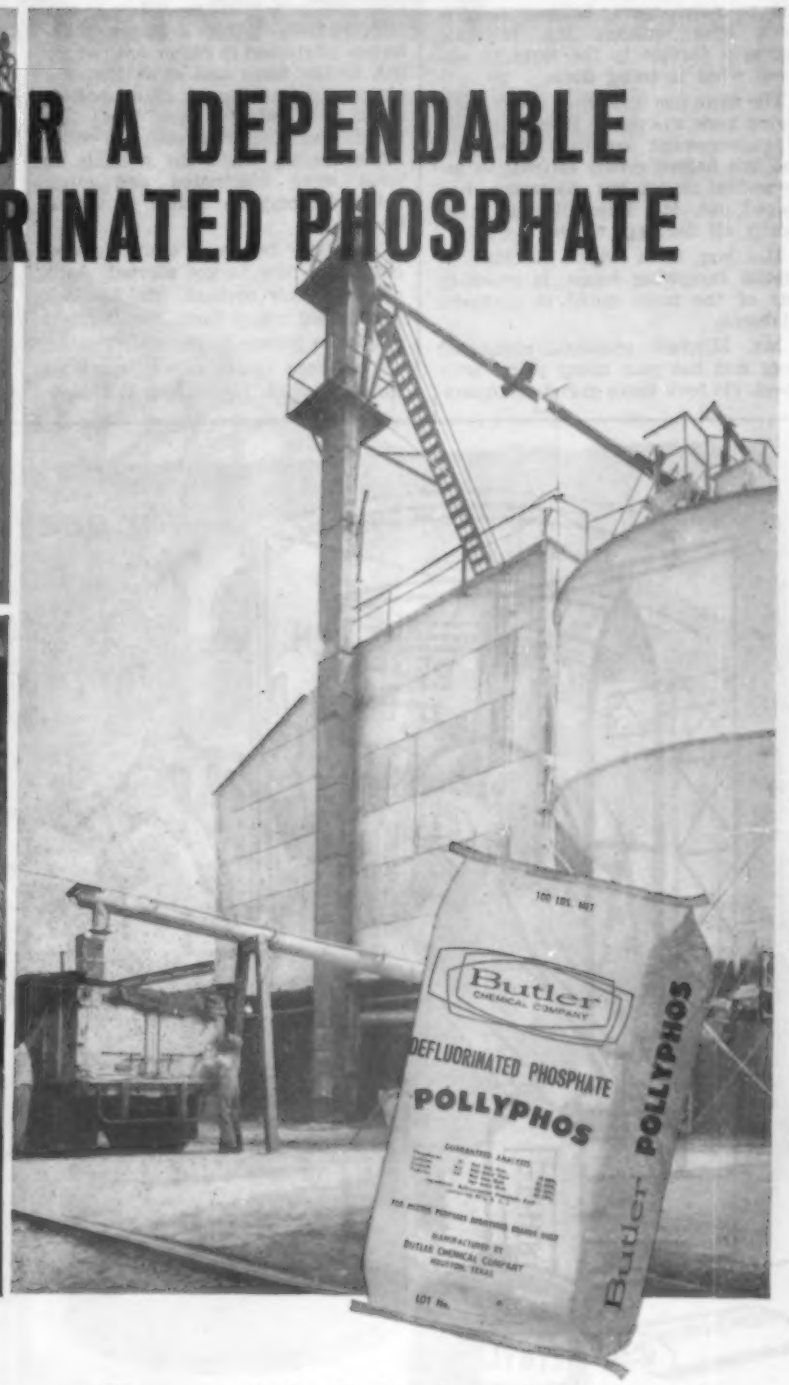
MOBILE MILL—A. N. Mitchell is shown on one of his three mobile feed mills.

Butler



YOUR SOURCE FOR A DEPENDABLE SUPPLY OF DEFLUORINATED PHOSPHATE





Now, when Mother Nature does not provide the required mineral ingredients for poultry and livestock, the demand for formula feeds greatly increases. Feed and mineral manufacturers look to a dependable source for a supply of proven high quality defluorinated phosphate.

Butler Chemical Company has consistently produced a phosphatic feed supplement of the highest quality . . . POLLYPHOS . . . for the feed and mineral manufacturers the country over.

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ty of insecticides and weed killers and many farm supplies.

His pilot farm has opened up new sales outlets because farmers visiting it have been induced to increase their poultry and swine operations. These projects and feeding results are widely advertised over TV, radio and in newspapers. Seldom does a week pass without Mr. Mitchell taking a farmer to the farm to observe what is being done.

The farm has a flock of about 9,000 laying hens where the latest methods of management are used. Not only has this helped create interest in independent flocks, but the income has helped out. Mr. Mitchell sells practically all the eggs at the store.

His hog farm where he built a special farrowing house, is probably one of the most noted in northern Alabama.

Mr. Mitchell produces registered hogs and has won many prizes with them. He took three grand championships at the Northern Alabama Duroc Show last year, and now has a boar that is the grandson of a national champion.

Show Entire System

"Instead of just telling a farmer how to make money with hogs or chickens, why not show him," Mr. Mitchell asks. "When a customer becomes interested in either one, we go out to the farm and show him the entire system—the kinds used, how much feed and what kind is needed, amount of facilities and the cost, labor needed, when the animals or birds were vaccinated and other things he may be unable to visualize."

Then the two men start figuring costs and how to get started. As a result of this method, Mr. Mitchell has helped many farm families add a sideline income to general farming.

The store owner is well qualified for such work. He holds a B.S. agricultural degree from Mississippi State College, worked on his master's degree at Alabama Polytechnic Institute and taught high school agriculture for many years.

Thus far Mr. Mitchell has taken no part in contract farming. He prefers to work with farmers independently. As long as they can continue this way, he will not change his methods. If contract farming becomes necessary, however, he is equipped to enter it and will do so.

TEXAS FIRM EXPANDS

SAN ANGELO, TEXAS — Palmer Feed & Supply, which took over the Ralston Purina franchise a few months ago, has added a 40 by 50 ft. storage room for sacked feed. The firm also added a Texas Cyclone mixer. The store originally shipped in sack feed, but now plans to make its own mixes of chicken, hog and dairy feeds.

AMENDMENT

(Continued from page 51)

represent practical approaches to the control of food additives and approaches that scientists throughout the world regard as models in food legislation.

"The first amendment is operating smoothly. We have established well over 2,000 tolerances setting the safe levels for over 100 pesticide chemicals that may remain on various food crops. The enforcement of these tolerance levels is fairly well under way. We are not doing enough checking to see that they are met, but our department has vigorously supported our requests for additional funds to meet the need here.

"The food additives amendment is still in the shakedown period. Some of the problems that loomed large a year ago have been resolved or are in the process of resolution. There are other problems yet to be met, but we have received commendable cooperation from all quarters, and there is every reason to hope that four years from now we can look back and say that the food additives amendment was put into effect as smoothly as the pesticide chemicals amendment. Of course, there will have to be increased enforcement in the food additives field also."

Southwest Hopes to Eradicate Screwworms

POINT CLEAR, ALA.—Immediate action to rid the South of anaplasmosis and screwworms was urged at the Conference of Southern Cattlemens Association Presidents.

The conference asked all government agencies interested in livestock disease control to set up a screwworm eradication program in the Southwest similar to the one which appears to have been successful in the Southeast.

Millions of sterile screwworm flies were released in the Southeast last spring to reduce the reproduction rate of the flies.

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Preparations Made for Broiler Test Program

DURHAM, N.H. — Preparations have been started for the 1960 New Hampshire broiler test program, according to Dr. W. C. Skoglund, head of the poultry science department at the University of New Hampshire.

The UNH test will probably have at least two new features, he said. Under one proposed plan, an entry in the test would consist of two pens of 140 chicks each, or 280 birds instead of the former 250. The second new feature under consideration would call for two tests a year, each test to consist of two nine-week trials.

Other proposed features of the test would have commercial entries still consist of hatching eggs selected from a composite of supply flocks, while experimental entries would include two pens of 140 chicks selected from a minimum of 1,000 chicks by a selecting agent.

The class assignment was to illustrate the song, "America, the Beautiful."

On looking over Johnny's illustration, the teacher recognized the flag, the map, the purple mountains, even the idea of the "sea to shining sea." But she was stumped by an airplane in one corner, covered with red and yellow balls.

"What's this supposed to represent?" she asked.

"That," Johnny said proudly, "is the fruited plane."

◆ ◆ ◆

The codfish lays ten thousand eggs,
The homely hen lays one.
But the codfish never cackles
To tell you what she's done.
And so we scorn the codfish,
While the humble hen we prize,
Which simply goes to show you,
That it pays to advertise.

◆ ◆ ◆

The Texas rancher, visiting Australia, was being shown around the largest farm in New South Wales.

"Why this would fit in one corner of my ranch back in Texas," he said.

When his friend pointed to a herd of 10,000 cattle, the Texan said, "Purty, but they'd get lost among my herd."

Just then a kangaroo leaped over them and the Texan, startled, asked: "What in tarnation is that?"

Whereupon the Australian said: "You mean you don't have grasshoppers in Texas?"

◆ ◆ ◆

Coroner: You say this woman shot her husband at close range. Did you see any powder marks on the body?

Witness: Yes. As a matter of fact, that's why she shot him.

◆ ◆ ◆

The minister was whaling away with his golf club trying to get out of the sand trap. Finally he lofted his ball only to have it go over the green into a trap on the other side.

Red-faced and exasperated he turned to the other members of the foursome . . . "Won't one of you laymen please say a few appropriate words?"

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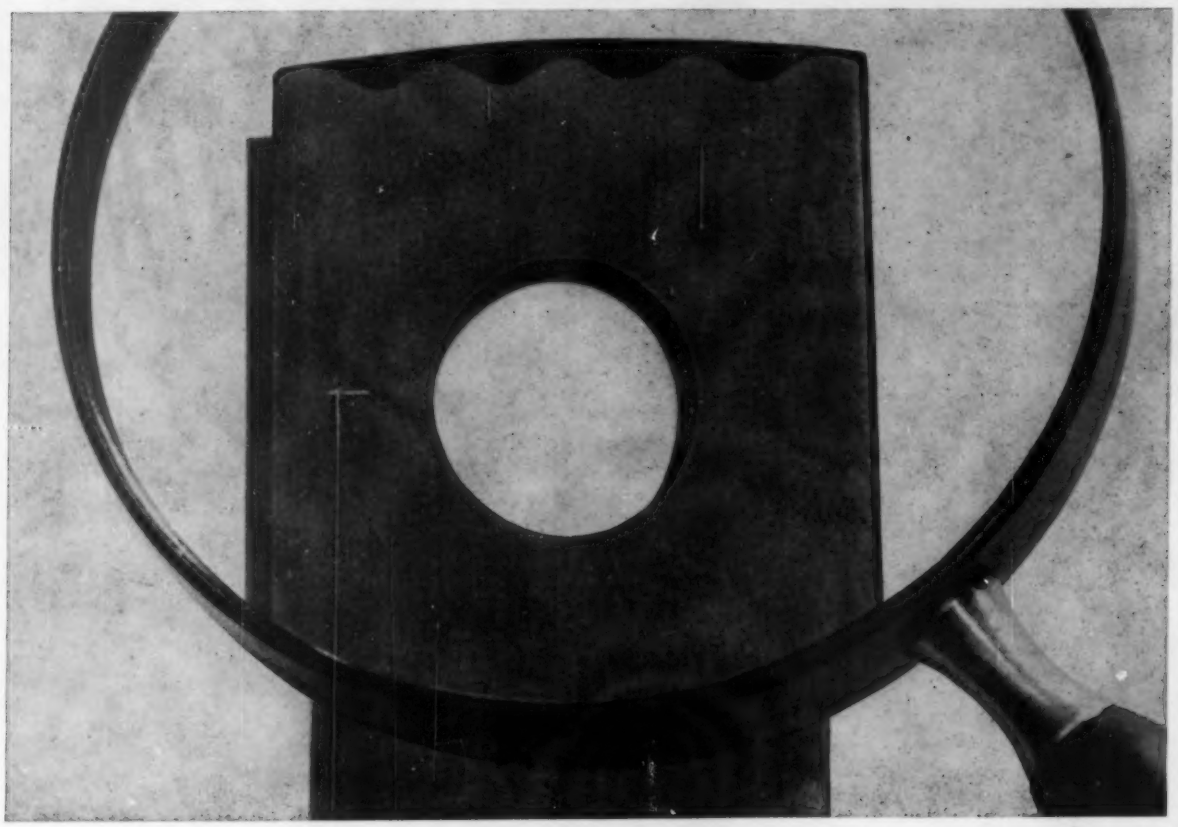

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Tranquilizers, Enzymes, Pelleting Among Topics at N. C. Conference

By Special Correspondent

RALEIGH, N.C.—A variety of subjects in the poultry and livestock nutrition field were discussed during the 12th annual Animal Nutrition Conference Dec. 3-4 at North Carolina State College.

Some of the subjects discussed were tranquilizers and enzymes for poultry and ruminants, pelleted feeds, zinc, antibiotics and disease in relation to nutrition.

The North Carolina Feed Manufacturers Assn. held a business meeting in connection with the conference, and the following officers were elected: A. C. Martin, John W. Eshelman & Sons, Sanford, president; D. H. Taylor, Ledo Feed Mills, Inc., Kinston, vice president, and Art Upshaw, Mocksville (N.C.) Feed Mills, secretary-treasurer.

Dr. John T. Caldwell, chancellor of North Carolina State College, welcomed the more than 100 feed manufacturers and representatives from allied industries. Dr. Caldwell thanked the North Carolina Feed Manufacturers Assn. for its support of such programs as "Nickels for Know-How" and other research projects which the college sponsors.

"Research programs and the training of research personnel," he stated, "are built around faculty. North Carolina State College and all the other schools in the country now are competing in the national market to obtain trained scholars.

"We must," he said, "attract better and bigger faculties to cope with the increasing college population. And we must encourage more young people to enter the teaching and research fields."

J. Wesley Jones, Jr., Statesville, president of the NCFMA, responded for the feed group.

Following are summaries of the talks during the two day program:

"CHANGING THE FATTY IN THE PATTY"—"The fatty acid composition of a fat largely determines the physical properties of the fat, the flavor, keeping qualities, and to some extent, the nutritional qualities of the animal product containing fat," said Dr. S. B. Tove, animal department, North Carolina State College.

He reported that the recent implication that linoleic acid may play a role in the control of coronary heart disease serves to emphasize the importance of the latter point.

He stated that, just a few years ago, the determination of the fatty acid composition of a fat was a very formidable task. Recently, a new technique called gas chromatography has come into use which enables the complete analysis of the fatty acid composition of a fat in a matter of minutes.

"By means of gas chromatography, it has been shown that as many as 30-40 different fatty acids may be found in an animal fat," said Dr. Tove. "Fortunately, however, only six acids comprise more than 90% of the fatty acids of most fats."

Dr. Tove reported on studies over the last several years using gas chromatography as a tool to discover how the fatty acid composition of dietary fat affects the fatty acid composition of the animal fat. For these studies, a mouse was used as a representative of the monogastric animal and steers, cows and sheep as representatives of the ruminants.

He stated that when a source of linoleic acid (safflower oil) is fed to mice, the linoleic acid content of their fat is increased, but two rates of increase are observed. When oleic acid is fed, the level of oleic acid rises to a maximum of 67%. When palamitic acid and stearic acid are fed, there is very little increase in the levels of these acids in the depot fat of the animals showing that these acids are largely oxidized by the animal as they enter and are not deposited.

"The story with the ruminant animals is quite different from the monogastric animals. Even though fats containing unsatured fatty acids are fed ruminants, these acids do not increase in the depot fat," Dr. Tove said.

"The ruminant differs from the monogastric animal in that it can deposit in the depot fat the stearic acid generated in the rumen, whereas the mouse did not deposit this acid when it was fed," he pointed out.

Dr. Tove commented that the dairy cow has been reported to deposit unsaturated fatty acids in the milk and as such would suggest that she is different from other ruminants. "Re-

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SOYBEAN GROUP AWARD—Dr. Max Myers (center), administrator, Foreign Agricultural Service, USDA, looks on approvingly as Dominic J. Marcello (right), director for Italy of the Soybean Council of America, presents a certificate of meritorious service to Clayton E. Whipple (left), agricultural attaché, U.S. Embassy, Rome. The certificate was granted by the board of directors of the American Soybean Assn. in recognition of "the meritorious service performed by Mr. Whipple for the soybean industry" and particularly for the Foreign Agricultural Service, USDA.

cent studies currently underway show that this may not be true," he said.

Dr. Tove noted, "Much work remains to be done and the information is vital if we are to understand the process by which an animal deposits fat. Once we learn this mechanism, we have high hopes of being able to control the process and produce an animal product that contains a fat more suited to our particular needs."

TRANQUILIZERS FOR POULTRY—"In the poultry industry," Dr. F. R. Craig of the host college, observed, "there is a need for a drug or drugs that will produce tranquility without impairing the economic performance of the bird, whether it be a breeder, commercial egg producer, broiler or turkey. Research workers also would welcome such a drug as an aid in handling experimental birds."

The most common objective behind research to date is that of reducing the flightiness of Leghorn strains with the hope of a subsequent improvement in production efficiency, he added.

Dr. Craig named four specific objectives: (1) to reduce feather picking and cannibalism in young birds and laying birds caged in pairs or groups; (2) to reduce susceptibility to stresses during handling and moving operations; (3) to reduce losses in egg production efficiency during periods of excessive heat, and (4) to reduce dorsal aorta rupture (dissecting aneurysms) in broad breasted Bronze turkeys.

The following, he said, are the more outstanding results from experimentation with tranquilizers in the poultry fields:

(1) Reserpine has been more extensively tried than other tranquilizers.

(2) The effects on poultry are not nearly so pronounced as with mammals.

(3) Reserpine:

(a) Levels of .5 mg./kg. diet and above depressed growth when fed continuously. A limited amount of tranquilizing may be observed with levels as low as .5 mg./kg. diet.

(b) Resistance to heat stress was increased when reserpine was fed at the 5 mg./kg. diet level for at least four days prior to high temperature exposure. Survival time was prolonged by reserpine and served as an aid in preventing loss of egg production, egg size and deterioration of shell quality.

(c) 1 mg./kg. diet produced significant increases in growth at 38 days of age.

(d) In one experiment, reserpine was not effective, when fed at levels up to 25 mg./kg. diet, in reducing mortality or changing social conduct of White Leghorn and New Hampshire males on range.

(4) Chlorpromazine:

(a) Is not a tranquilizer at any level.

(b) Was effective in prolonging survival time during heat stress when fed at levels of 25-50 mg./kg. diet.

(5) Perphenazine:

(a) Oral doses varying between .5-5 mg./lb. body weight produced tranquility according to increased dosage and lasted up to 48 hours.

(6) Meprobamate:

(a) When fed at levels of 125 mg. and 250 mg./lb. diet, failed to give a noticeable reduction in flightiness of Leghorns.

(b) Lymphatic involution occurred as indicated by a significant reduction in the weight of the bursa of Fabricus.

(7) Promazine:

(a) When fed at levels of 125 mg. and 250 mg./lb. diet, failed to give a noticeable reduction in flightiness of Leghorns.

(b) Body weight was significantly reduced.

Dr. Craig said experimentation to date has "failed to discover a completely satisfactory tranquilizer for poultry. However, new tranquilizing compounds are being developed very rapidly by various pharmaceutical companies. Perhaps one will be found that is effective in poultry."

TRANQUILIZERS AND ENZYMES FOR RUMINANTS—"The spectacular success of diethylstilbestrol as a growth promoting substance for ruminants," said Dr. M. B. Wise of the animal nutrition section, North Carolina State, "has precipitated a widespread search for other nonnutritive materials with similar influence on weight gains."

Limiting his talk to recent and current research on the use of tranquilizers and enzymes in growing and fattening rations for beef cattle and lambs, Dr. Wise reported that results of research with tranquilizers have varied from depressions in performance to appreciable increases.

Results of initial work with hydroxyzine (Tran-Q), published by the manufacturers, appeared promising, giving increases in cattle gains and feed efficiency in the neighborhood of 6-12 per cent, he said. Even more striking results were later released for lambs, he added.

The Texas station and Kansas station reported favorable results using hydroxyzine while workers at Purdue, Iowa and Kentucky found no benefit. Ohio workers reported no benefit from thorazine for fattening cattle. Kentucky, Iowa and Ohio found no significant influence on cattle gains using trifluomeprazine. However, a recent report from Kansas presented data which shows trifluomeprazine stimulating gains considerably, Dr. Wise said.

At the North Carolina station, 114 animals were utilized in two experiments to determine the influence of trifluomeprazine on wintering performance of calves and on feedlot performance and carcass grades of fattening yearling steers. No advantage in winter gains of calves resulted (trifluomeprazine at 5 mg. per head per day). Slight, but statistically insignificant, decreases in gain resulted from the use of this product. Calves fed trifluomeprazine were slightly thinner, steers (5 or 10 mg. of trifluomeprazine in ground ear corn implanted with 24 mg. of stilbestrol) showed slight increases in gain and a statistically insignificant increase in shrink and a decrease in dressing per cent, carcass grade and feed efficiency.

"Results on research with enzymes for fattening cattle," he continued, "are very limited at the present time, although a larger number of trials are now in progress."

Dr. Wise concluded that there may be systems and situations where tranquilizers and enzymes are advantageous, but, he stated, there are conditions in which either or both are without benefit and these conditions or situations referred to are, as yet, undefined.

RESEARCH IN CHANGING TIMES—"In this rapidly changing era, research is essential for survival," according to George Hyatt, Jr., of the college's agricultural economics department.

He reported North and South Carolina's 222% and 263% growth respectively in beef cattle numbers in 10 years and their substantial growth in pig and sheep.

"Our animal research programs at land grant institutions," he said, "must have a nucleus of workers searching out the fundamental whys."

In addition to the long-range research, he stated, solutions for contemporary problems created by a rapidly changing industry must be solved. These problems call for quick adjustments on the part of research staffs and almost immediate application to the industry.

Because the feed industry is "a great user of research," Dr. E. W. Glazener of the poultry science department reported on 21 projects currently being conducted by that department.

According to Dr. Glazener, there are three types of research: testing of and evaluating ideas, developmental and information and knowledge.

THE VALUE OF PELLETED FEEDS IN ANIMAL NUTRITION—Dr. K. L. Dolge, Wirthmore Feeds, Inc., Waltham, Mass., estimated that 56% of all manufactured feed in this country is pelleted, crumbled or cubed.

He reported the following advantages of the pelleting of feeds including roughage: (1) reduction of bulk and storage requirements, (2) reduction of dust in feed handling on the farm, (3) improvements in flow characteristics, (4) reduction of waste in feeding, (5) improved uniformity of bulk, (6) prevention of loss of costly feed additives and (7) elimination of separation and selection, assuring balanced nutrient intake.

According to Dr. Dolge, pelleting of broiler feeds results in improving growth and feed efficiency and the response is found even in high fat rations. Similar results have also been found with turkeys. Laying hens have shown an increase in feed consumption on a crumbles versus mash comparison with no increase in egg production. "There is, however, some indication of a breed difference," he said.

"Pelleting in the ruminant field," he stated, "has found three applications: pelleting of all or part of the grain ration, pelleting or wafering of the roughage and pelleting of the complete ration."

Studies have indicated that an all-pellet ration is consumed somewhat more rapidly by milking animals than a similar ration fed as meal, but there is no demonstrated improvement of

TENNESSEE FEED MEN SOCIALIZE—These groups got together for some conversation during a social hour at the Tennessee Feed Manufacturers Assn. meeting at Memphis recently. Talking things over in the pictures are (left to right): Louis E. Pounders, Bemis Bro. Bag Co., Memphis; J. G. Johnston, Security Mills, Inc., Knoxville, and E. C. McReynolds, agricultural extension service, University of Tennessee, Knoxville; second picture, Harold Steinman, International Minerals & Chemical Corp., Kansas City; Biren Bass, Publicker Industries, Inc., Philadelphia; Hal Pryor, Nopco Chemical Co., Memphis, and David L. Rucker, National Alfalfa Dehydrating & Milling Co., Memphis; third picture, Bob Karlsberg, Continental Grain Co., Memphis; Peter McCary, McCary Brokerage, Nashville; Mrs. Karlsberg, and M. Decker, Riceland Feed Mill, Stuttgart, Ark.

palatability. However, because of bulk bin flow problems, interest in pelleted concentrates for dairy animals continues.

With milking animals, the pelleting of roughages has generally resulted in decreased fat percentages and in some instances disruption of rumen function. These difficulties are believed to be due to the fine grinding of the roughage and can apparently be alleviated by feeding a limited amount of dry hay, said Dr. Dolge.

He stated that pelleted complete rations for steers and lambs are receiving the greatest amount of attention. Generally, greater feed consumption and faster gains have been reported. In all instances, the higher roughage pellets have given better results with lambs that those which contain a greater percentage of grains.

For swine, starter rations are almost universally pelleted because of their effect of reducing waste and increasing palatability, whereas prestarter rations generally are fed as meal. Generally, pelleting has been found to increase daily gain and feed efficiency and reduce feed intake, particularly with barley-base rations.

"In the future," Dr. Dolge concluded, "the area of greatest activity undoubtedly will be in the pelleting of roughages and complete rations for ruminants. A great deal of research must be accomplished to determine more precisely the chemical and physical changes which result from the pelleting process and their biological effect upon the animal which consumes them."

THE ROLE OF ZINC IN ANIMAL NUTRITION—Dr. J. A. Hoefer, department of animal industry, Michigan State University, stated that during the last five years, many investigations have been reported which indicate, without question, that zinc has a very practical, as well as fundamental, role to play in animal nutrition. The importance of zinc came to light when it was observed that this element was very effective in preventing and curing parakeratosis in swine.

"Recent research," he reported, "showed that supplemental zinc improved growth performance at three calcium levels (.3%, .5% and .7%). Purdue workers have reported a requirement of approximately 40 ppm. of zinc in the total ration while Illinois research indicates that pigs will tolerate up to .1% zinc (1,000) ppm. before developing symptoms of zinc toxicosis. Thus, it would appear that there is a considerable margin of safety in zinc feeding and that there is little likelihood of zinc poisoning developing."

Dr. Hoefer concluded that zinc from the several different compounds (sulfate, carbonate and oxide) tested seems to be equally available to the animal when fed on an equivalent elemental basis. When the calcium content of the ration is near normal, 25 ppm. of supplemental zinc seems adequate. With higher calcium rations, (.8% up) from 50 to 100 ppm. should be fed. The average ration before supplementation contains from 30 to 40 ppm. Zn.

WHEN IS A RUMEN A RUMEN?—Dr. R. G. Warner of the department of animal husbandry, Cornell University, stated that the four compartments of the ruminant stomach exist and are well defined early in fetal life. At birth, the rumen occupies about 40% of the total stomach capacity which increases to over 80% in the mature cow.

The development of rumen papillae (absorptive units of the rumen wall) has been shown to result from the absorption of the end products of rumen fermentation. Changing from dry feed to a milk diet results in complete disappearance of the papillae.

"The musculature of the rumen," he continued, "develops in response to the load it carries. Non-fermentable roughage such as shavings caused a marked increase which was similar to that caused by grain or hay and was much greater than that resulting from milk diets."

Dr. Warner said, "Most of the anatomical, biochemical, physiological, and microbiological development of the ruminant stomach has advanced to a marked extent by seven to nine weeks of age for calves receiving liberal amounts of dry feed and housed under usual management conditions. There is, however, some evidence to

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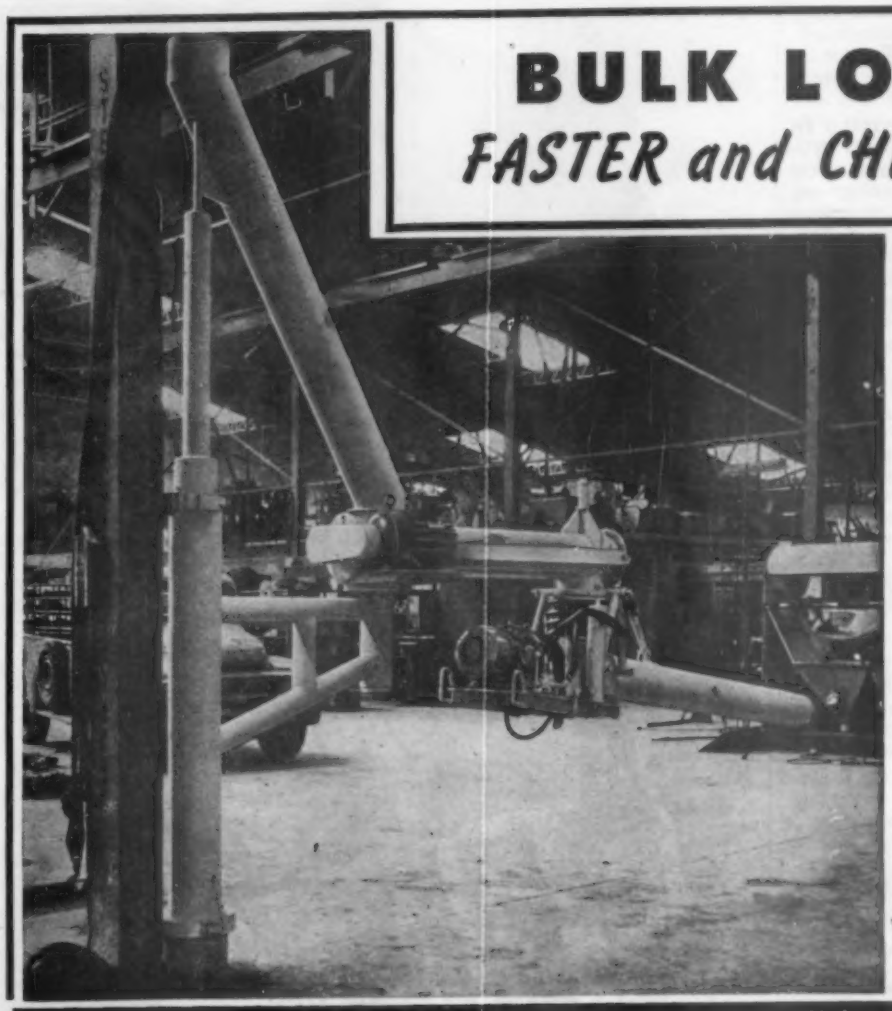

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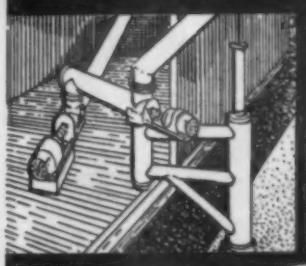

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CANADIANS AT CORNELL—There were a good many Canadians at the Cornell Nutrition Conference in Buffalo. Some of them are pictured here. Left to right are P. K. Cuff and Ronald Latimer of John Labatt, Ltd., London, Ont., and Jacques de Broin, Pioneer-Cafeteria Feeds, Ltd., Toronto.

suggest that cellulose utilization of poor quality hay is not maximum even by three months of age."

THE ROLE OF ANTIBIOTICS IN POULTRY AND LIVESTOCK NUTRITION—Dr. Charles H. Hill of the college's department of poultry science opened the three-part discussion of antibiotics with "The Role of Antibiotics in Poultry Nutrition." He stated that antibiotics still are being fed to poultry as a routine practice, although it appears that only under certain slightly unclean conditions are they effective.

In study of the mode of action of antibiotics in stimulating growth, he stated, our attention has been turned to some hormonal aspects. The results to date indicate that some of the hormones normally produced under stress conditions make chicks respond to antibiotics. If these findings are borne out by further studies, it would indicate that chicks whose growth was depressed by any number of stress situations would be responsive to antibiotics.

Dr. Hoefer covered antibiotics for swine and Dr. W. E. Thomas of the North Carolina State College department of animal husbandry covered the products in ruminant nutrition.

Dr. Thomas stated that the feeding of antibiotics to ruminants might logically be expected to produce more varied responses than the case of simple stomach animals.

"Generally speaking," he reported, "the feeding of antibiotics to cull, infected or sick ruminants has shown consistent favorable results, but if the control animals are healthy and growing well, the responses are somewhat inconsistent. In certain specific situations, the feeding of antibiotics to ruminants may be recommended, but in many cases, it cannot be recommended on the basis of the research information that is currently available."

RAISING DAIRY CALVES—Dr. Warner compared several systems of raising dairy calves. He stated that the feeding system that a dairyman selects should depend upon his personal requirements for cost as well as calf performance. There are many systems being recommended and used, and the absence of any best one suggests that most are satisfactory for producing useful milking cows under a wide range of management conditions.

Continuing, he stated that the potential rate of gain of Holstein calves on milk, free choice, is over 2 lb. per day up to two months of age, while the "normal" growth standard is about .9 lb. per day. The rate of gain may be adjusted between these points by altering the level of milk feeding.

Examination of the calves has shown that over 96% of the calves gaining over a pound per day were thrifty, were smoothly fleshed, and were acceptable in appearance. The higher the rate of gain, however, the better the appearance.

"These observations," Dr. Warner explained, "suggest that the system utilizing 25 lb. of low-fat milk replacer fed with a calf starter of a 4 lb. maximum is an acceptable way to raise dairy calves, and further, is the most economical of those tested."

He stated that limited-milk systems will be successful only if there is liberal grain consumption. Without exception, calves which ate hay in preference to grain grew more slowly, were pot-bellied and were less thrifty in appearance.

NUTRITION AND DISEASE RESISTANCE—"Work in our laboratories," Dr. Hill reported, "has shown that the feed of chickens profoundly affects their resistance to two disease conditions, fowl typhoid and a lymphoid tumor transplant. The work of both these conditions has been with a simplified corn-soybean meal basal diet supplemented with methionine, vitamins and minerals to make it adequate for growth. The addition of all the known required vitamins at high levels plus ascorbic acid increases resistance of both fowl typhoid and tumor transplant."

After covering choline requirements, vitamin K and protein levels, Dr. Hill said, "While it is possible to increase resistance to disease by dietary treatment, it may not be profitable to routinely add high levels of vitamins to commercial feeds. In an experiment with laying hens, it was found that the high vitamin levels, with or without an antibiotic, did not result in any particular gain in production, feed efficiency or lowered mortality."

"It should be noted," he added,

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"that these birds were not subjected to any disease during this period."

Dr. Hill stated that the vitamin requirements for maximum resistance to disease are increased by a variable amount depending on the vitamin under discussion and upon the disease condition. High protein feeds do not render animals less susceptible to fowl typhoid and, indeed, make them more susceptible unless the vitamin levels are increased. In a practical field trial, no benefit was observed from high vitamin levels possibly because no disease conditions were encountered, he said.

FIRM INCORPORATED

VANCEBURG, KY.—J. F. Bertram Co. has been incorporated with capitalization of $150,000 to deal in motor vehicles, farm implements, feeds, seeds and fertilizers. William C. Bertram, Malcolm Roe and Chester F. Newman were listed as incorporators.

Feeding Chemicals for Grubs Not Advised

STATE COLLEGS, MISS.—Feeding of Trolene and Dimethoate to cattle for grub control is not recommended at this time because of the chance of accompanying adverse side reactions, according to a report by Dr. W. W. Neel, entomologist, in Mississippi Farm Research.

Dr. Neel said a series of severe side reactions followed the feeding of Trolene and Dimethoate premixes to both yearling and calf heifers. About half the animals in each lot appeared affected by such symptoms as loss of appetite, leg weakness resulting in a staggering gait, frequent urination, diarrhea and increased salivation.

A 10% Dimethoate premix and a 10% Trolene premix were fed to the separate lots of heifers at the respective rates of 5 mg./kg. and 35 mg./kg. for three days. The total amount of premix for each day's rations was thoroughly mixed with 10-15 lb. cottonseed meal and poured over grain sorghum. Following the clean-up of these prepared materials the animals in each lot were given free access to Dallis and Bermuda grass hay.

Dr. Neel said that there is some evidence that the side reactions following therapeutic doses of these materials were caused by the grubs per se destroyed by the chemical. He said, "It appears quite likely that these responses are in the nature of an anaphylactic type of reaction. Reactions somewhat similar to these have been noted to occur in other areas when cattle were treated rather late in the season after the grubs had developed to a considerable size."

Dr. Neel said further testing of premixes in feed will be continued in an effort to determine what factor or factors may be responsible for these reactions.

Says Difference In Farm Managing, Owning to Lessen

MANHATTAN, KANSAS — The farm owner has always prized his independence of operation and freedom for decision making.

But a speaker at Kansas State University's Farm Business Days banquet recently warned that the difference in independence between the farmer who is the owner and the farmer who is a manager will be less significant in the future.

Henry J. Meenen, head of the University of Arkansas department of agricultural economics, pointed out in a prepared talk that food chains and other comparable units nearer the consumer will be dictating specifications for their products—with fewer decisions being left to the farmer.

"He will be producing varieties, breeds, weights, etc., according to specifications," Mr. Meenen commented. "The owner may continue to be more independent than the manager, but his choices may be so limited that this added degree of independence may be rather meaningless."

Mr. Meenen qualified his comment by noting that this "lack of choice" would not apply as much to production of field crops as it would for some other commodities.

In return for the farmer's loss of independence, he should be compensated with a more certain market for his product in terms of quantity and price, the economist said.

"If you do not have the ability to be a manager," Mr. Meenen said, "integrated agriculture will hire the manager to put over you and you will be the hired hand."

On the other hand, ingenuity and initiative always will be rewarded, he said.

Mr. Meenen spoke on the subject, "Owner, Manager or Hired Man—Which Are You Headed For?"

New Leader Dealer

CEDAR RAPIDS, IOWA—Griffin Implement & Milling Co., Inc., Monroe, N.C., is a new distributor for Highway Equipment Co., Cedar Rapids.

Griffin will handle New Leader lime spreaders, combination lime and fertilizer spreaders, wide spread lime and fertilizer spreaders and mobile blenders.

Lloyd Burlingham, famous farm newscaster, reports to feed mixers on the value of fresh-dried sweet whey—KRACO by KRAFT.

BY-PRODUCT BOOST FEEDS...THE THRIFTY WAY!

by Lloyd Burlingham

You are interested, I'm sure, in improving the quality of your feeds . . . provided you can do so at a reasonable cost. I believe you can and that's why I recommend Kraco to you.

Kraco is pure fresh-dried sweet whey. A thrifty and natural source of important milk by-product nutrients that makes a good feed even better. When you use Kraco in your formulas, your customers get results. You'll sell more feed, get repeat orders and make more money and profit.

I've watched Kraft make Kraco. Only whey produced in the processing of their finest low-acid cheese is used. They dry the whey in a matter of hours to produce a product that is truly fresh and naturally sweet.

Kraco is guaranteed to contain a minimum of 68% lactose (milk sugar). And high-quality protein (largely lactalbumin). You also get the important whey factor, milk minerals and B complex vitamins of whey. No wonder Kraco makes good feeds better.

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Purina to Assist 10 Grad Students

ST. LOUIS—Ten agricultural college students will be assisted in their graduate work under the Ralston Purina Co. Research Fellowship Awards program for 1960-61, according to J. D. Sykes, vice president.

An outline of the program and application blanks are being sent to agriculture colleges throughout the U.S. and Canada.

As in the past, selection of the 10 winning students will be made by a committee of five, composed of representatives from the Poultry Science Assn., American Veterinary Medical Assn., American Dairy Science Assn., American Society of Animal Production and the American Association of Land Grant Colleges and State Universities.

Three fellowships will be awarded in poultry husbandry, three in animal husbandry, three in dairy husbandry and one in veterinary science. Each fellowship amounts to $1,800.

The awards committee says, "By assisting in the training of additional personnel, the program is furthering the interests of animal agriculture."

Awards are made in the fields of nutrition and physiology research as applied to dairy, poultry and animal husbandry, and research in transmissible diseases of livestock and poultry.

Application blanks for the awards may be obtained by writing the Ralston Purina research awards committee, J. D. Sykes, Ralston Purina Co., St. Louis 2.

Calcium Arsenate Is Used to Control Flies

CONWAY, ARK.—Three Faulkner County poultrymen effectively controlled flies under caged layers by using a formulation of calcium arsenate, according to Jim Moffet, associate county agent, and Lowell Lankford, extension poultryman.

Mr. Moffet said the high suspension calcium was used as a spray and was mixed at the rate of 2 lb. of the powder to 3 gal. water. This was enough to spray some 1,000 sq. ft. floor space.

Mr. Moffet said the spray successfully controlled flies for 15 days. On the 16th day, he said, there was some larval activity and the houses were sprayed again.

Results of these tests indicated that the houses should be sprayed every 10 or 12 days for best results, he added.

POULTRY FIRM INCORPORATED

SONOMA, CAL. — Anderson Poultry Ranch has been incorporated here with stock valued at $250,000. Officers include Henry Basch, Bruno Cesana, Glen Ellen and Frank R. Anderson.

Iowa Livestock Feeding Margin Cut in Half

AMES, IOWA—The Iowa farmer's livestock feeding margin has been cut in recent years to less than half what it was in the 1947-51 period, according to H. B. Howell, extension farm economist, Iowa State University.

He said the downward trend is shown in summaries of records of cooperators in the university's extension service Farm and Home Development Program, the Iowa Farm Business Associations and the extension service farm record project.

These include records of 25 or more farmers in each of three farm size groups in each of seven economic areas in Iowa—more than 525 representative farms throughout the state. Mr. Howell said these cooperating farmers are probably operating more efficiently than the average farmer, but their experience shows the trends that are developing throughout the state for all farmers.

In the 1947-51 period these cooperating farmers received an average return of $160 in the value of market livestock for each $100 worth of feed. This meant the farmer had $60 per $100 of feed investment to pay his other costs—his livestock housing and equipment costs, taxes, insurance, veterinary fees, labor, fencing, land, interest, transportation and other costs.

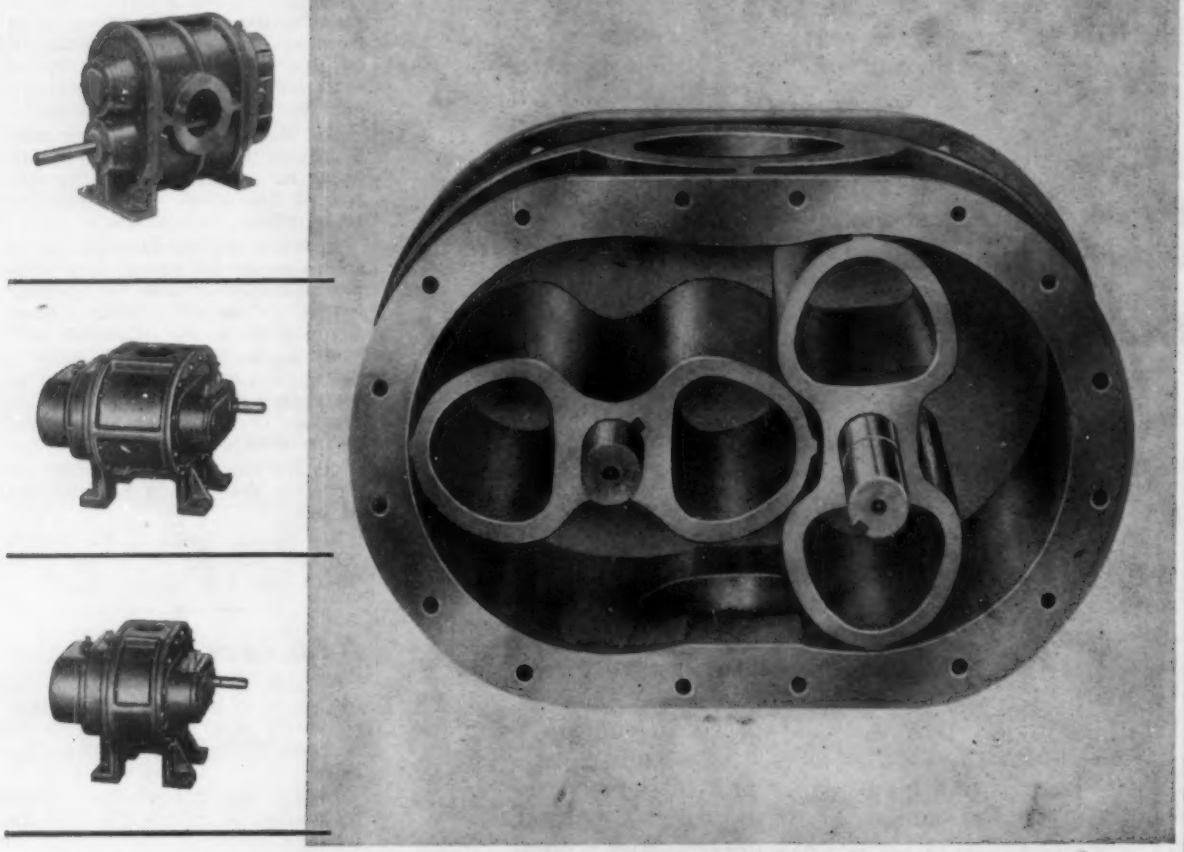
The moving average return during 1948-52 was cut to only $147 per $100 of feed. There was a little recovery in the 1949-53 period, when the moving average showed a return of $156. Then it declined with declining feed grain prices and increasing livestock numbers until the margin was only $129 for each $100 worth of feed fed in the 1952-56 period.

Since then the returns increased, but never got back to the levels of the earlier period.

These narrowing margins, Mr. Howell said, are one reason why farmers are attempting larger and more intensive livestock operations. They need larger volume to keep up their total income and to meet living costs as the margins of return narrow.

NEW STORAGE TANKS

GRANGER, WASH. — Four large steel storage tanks have been erected at the Washington Cooperative Farmers Assn. plant here. The tanks have a combined capacity of 8,000 tons of grain storage and will be used principally for dried corn and milo, according to Leonard Evans, plant manager. The new tanks supplement a recently-installed storage unit of 2,000 tons. With storage space in the plant itself, total storage at the present time is 11,000 tons, Mr. Evans said. In addition to the new tanks, a 750 bu. per hour capacity drier and accompanying conveyor equipment has been installed.



Sutorbilt blowers deliver air or gas at capacities up to 20,000 cubic feet per minute and pressures or vacuums up to 10 pounds. Design incorporates two figure-eight impellers which rotate in opposite direction and deliver a metered volume of air or gas.

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JOE BROOKS

(Continued from page 32)

judged, then we can offer to sell samples and a cup of coffee to anyone for 25¢."

"Oh, we get our money back through those sales, eh?" Joe asked, eagerly.

"No! I'm surprised at you, Joe. We will divide the receipts for the 25¢ luncheon equally among the churches on the basis of how many members they have who register in our Christmas attendance book."

Joe whistled. "Say, that would help rural churches get a little extra dough, wouldn't it?"

"Certainly, and those churches will turn out the members. You wait and see."

"In other words, our Christmas Party goodies contest will have more Yuletide delicacies on display than perhaps any other place in town."

Mary nodded, a wide smile on her face. "Exactly."

"And with so many people in the store to see the delicacies and to sample them, someone is bound to order some feed and other farm supplies."

"Ssh!" Mary cautioned. "This isn't supposed to be a commercial proposition."

"No," Joe agreed, "but if a farmer attending wants to order a half ton of feed, or three tons, or place a fertilizer order for spring, I am not going to turn him down!" Joe sounded belligerent.

Soft Sell

"Of course not," Mary said, sweetly, "but just don't grab a farmer by the sleeve, smile at him and ask if he needs feed. That's what I mean."

"Gosh, am I that eager to sell?" Joe asked in wonder. Then, "But, Mary, you forgot one thing. Suppose a woman brings in a fruit cake or some cookies, is she going to be willing to donate them to the church lunch? That is, those who can't win first in their divisions."

"I think they will. You see, Joe, you can set up a prize schedule in each division. Yes, you can. Second and third prizes can be cat and dog stock you have on your shelves. And then there can be some consolation prizes, maybe trade certificates."

Joe glanced at his wife admiringly. "You thought of everything, didn't you? Well, it sounds good to me. I'll go for it. And I'll devote the front page of my monthly bulletin to it. Plus some newspaper advertising, too. We'll sure have a Christmas celebration which will be different, all right."

Materials Prevent Scours, Fail to Help Gains, Tests Indicate

LEXINGTON, KY.—Swine rations, containing materials to prevent scours, did not help weight gains, feed efficiency or backfat measurements although preventing scours in tests at the University of Kentucky, researchers report.

In recent experiments, Prof. C. E. Barnhart, researcher, took 32 purebred Hampshire weanling pigs and fed them different rations in groups of four.

The control group was given a standard ration with no additives, with one group getting Aureomycin, the second furazolidone, the third trimethyl-alkyl-ammonium stearate, another hygromycin, another arsanilic acid; while others received arsenosobenzene, and 3-nitro 4-hydroxyphenylarsonic acid.

Prof. Barnhart said he was unable to determine why the materials, though preventing scours, did not help weight gains, etc. He noted that the furazolidone had about the best effect, but was not significantly better than all the others. This group had a 1.37 lb. daily average gain and a rate of 250 lb. of feed for each 100 lb. of gain.

He added that he took practically the same materials in a parallel test and the results were about the same.

In this test, Prof. Barnhart substituted copper sulfate and piperazine phosphate for two of the first test materials.

He found the Aureomycin additive produced the best daily gain, about 1.39 lb., but added that this figure was not significantly better than the others. He said furazolidone produced 1.36 lb. and copper sulfate, 1.32 lb.

In feed per 100 lb. of gain, arsanilic acid and arsenosobenzene were best, averaging 302 lb. But several others were close to this, the basal (control) ration for one, requiring only 308 lb. of feed per 100 lb. of gain, and the Aureomycin, 311 lb

Prof. Barnhart said that additional tests are being planned to secure further data on the use of additives such as those used in the first experiments.

FEEDERS SUPPLY SOLD

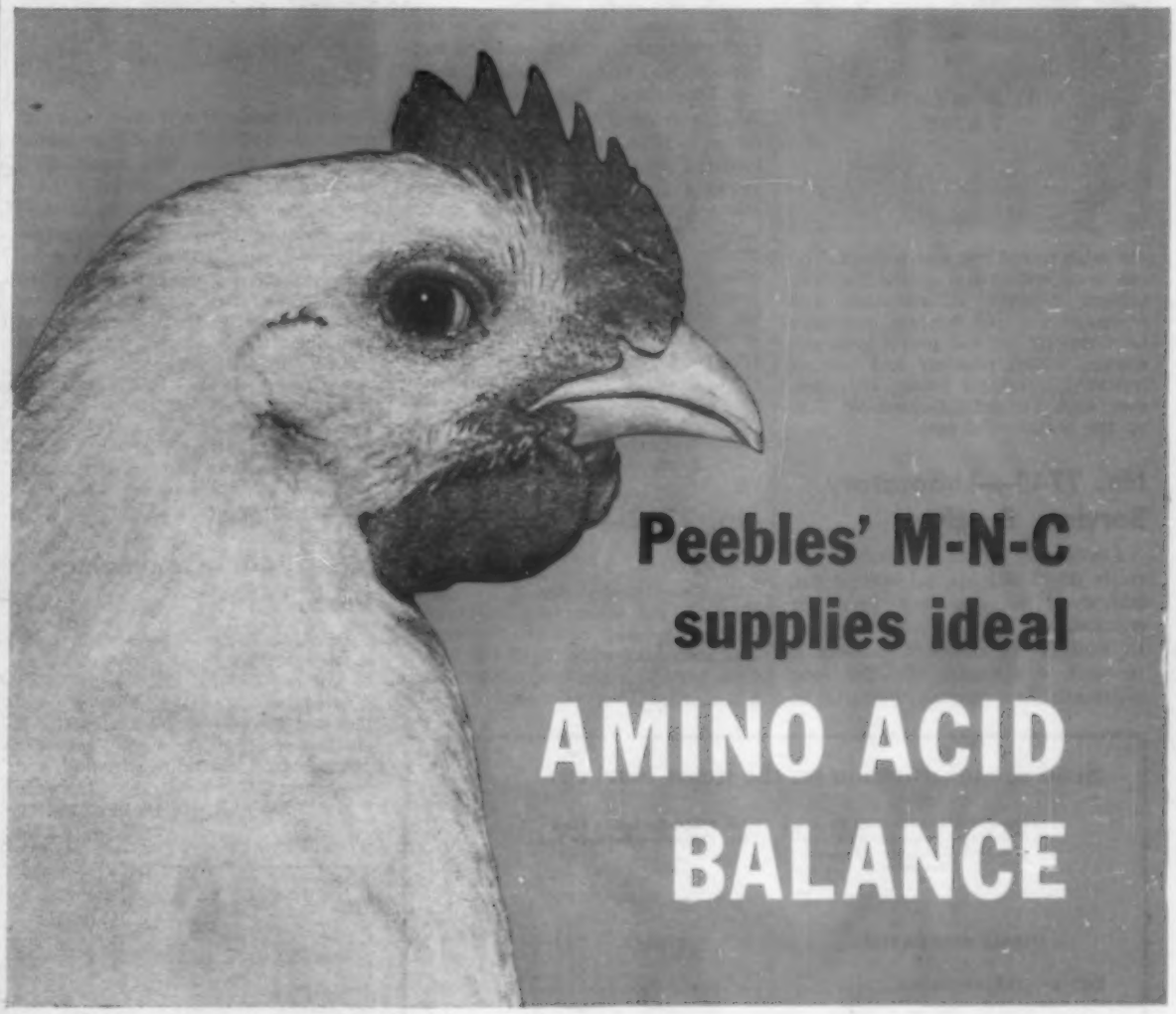
CONWAY, ARK. — Conway Feeders Supply, Inc., Purina retailer, has been sold to Paul and Henry Enderlin of Conway, it was announced recently. The sale price was not revealed. Henry Enderlin said the store will be operated in connection with their present feed mill. The brothers now operate the Enderlin Gin Co. here.

Cliff Stewart Joins Pillsbury Feeds

CLINTON, IOWA — Cliff Stewart has joined the marketing department of Pillsbury's feed division as manager of the Maxi-Lay Queen department, it was announced by J. K. Hubbard, director of marketing for the feed division.

Cliff Stewart

Mr. Stewart has been actively engaged in the poultry industry for many years, having served on many state and national committees. He majored in poultry husbandry at Iowa State University, Ames, Iowa, and for seven years served as executive secretary for the Iowa Poultry Improvement Assn.



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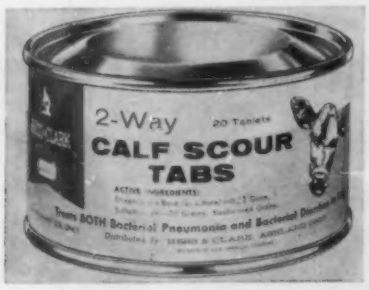
No. 7745—New Package Size

Hess & Clark announces a new 20-tablet can for its "Calf Scour Tabs." As in the past, the product will also be sold in packets of four tablets, the company says. The can contains 20 7-gm. tablets packed in a foil lined



can with metal top and bottom. The can is opened with a drawstring. The tablets contain sulfathiazole and Streptomycin, for fighting infectious bacterial scours and pneumonia, and Kaolin, which protects and soothes irritated intestinal lining, the company says. For details, check No. 7745 on the coupon and mail.

No. 7743—Laboratory Services Brochure

Availability of an illustrated brochure describing special and routine laboratory services has been announced by Harris Laboratories, Inc. In addition to standard services in research and testing for the food, pharmaceutical and agricultural industries, company literature says, several unusual facilities are listed. Among these are technical surveys for investors and lending agencies, research farm facilities and other investigations. The brochure is available by checking No. 7743 on the coupon and mailing to this publication.

No. 7741—Pre-cut Steel Structure

Thoro-Speed Co. announces a "pre-cut" steel structure designed to handle cobs and husks from usual shelling operations. The structure also handles crushed cobs when cobs are suited to litter or bedding, mulch and feedstuff commodities. The "Thoro-Speed Cob Crusher" is mounted in the top area of the "house" and a valve between cob collector and crusher permits whole cobs to by-pass the processing machine, for disposal by means of the electric cob bin unloader. Either whole cobs or crushed cobs can be moved at "a truckload a minute," the company says. Bridging of cobs is impossible due to the design of the hopper, company literature says. For more information, check No. 7741 on the coupon and mail.

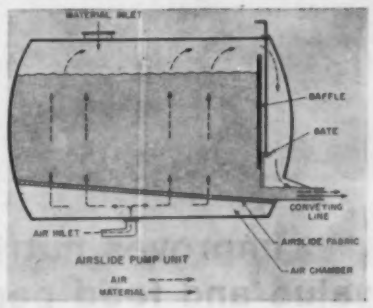
No. 7742—Proportioning Pump

An electrically-driven "Chem-O-Feeder" for accurate proportioning of concentrated corrosive chemicals has been announced by B-I-F Industries, Inc. The diaphragm-type pump, Model 1331 Proportioneers Chem-O-

Feeder, is made of corrosion-resistant materials and will effectively meter such chemicals as phosphoric acid, the company says. Featuring adjustable stroke length while in motion, the pump can be used in the chemical and general industries, the company says. The pump can be installed on the floor, shelf or wall, and takes suction directly from the shipping container. Range is over 4 to 1, with capacity up to .7 GPH into discharge pressures up to 100 PSIG, company literature says. Complete package is ready for installation and includes pump, foot valve, injection nozzle, connecting hoses and instructions. For more information, check No. 7742 on the coupon and mail.

No. 7744—Conveying Pump

Dry bulk material fed into a pneumatic conveying line is controlled as to volume and material-air ratio by a low-pressure tank and pump combination introduced by Fuller Co. A single source of air supply provides pressure for unloading, feeding and conveying. Called the "Airslide Pump," the unit can be mounted on



truck, trailer or skids. It serves as a self-discharging bulk carrier, the company says. Essentially a tank in structure, it is of lightweight construction, increasing the payload within weight limitations. Control of material discharge rate permits regulation of material-to-air ratios so that conveying can be accomplished at operating pressures below 15 psi, and therefore, below range regulated by pressure vessel codes, the company says. For further information check No. 7744 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 7718—Calf scour treatment, Hess & Clark.

No. 7719 — Bag closing machine, Crown Zellerbach Corp.

No. 7720—Roller mill steamer, Roskamp Huller Manufacturing Co., Inc.

No. 7721—Bulk hog feeder, Pannier Bulk Feeder, Inc.

No. 7722—Hog farrowing stall, Mahaska Industries, Inc.

No. 7723 — Spot removal unit, George A. Rolfes Co.

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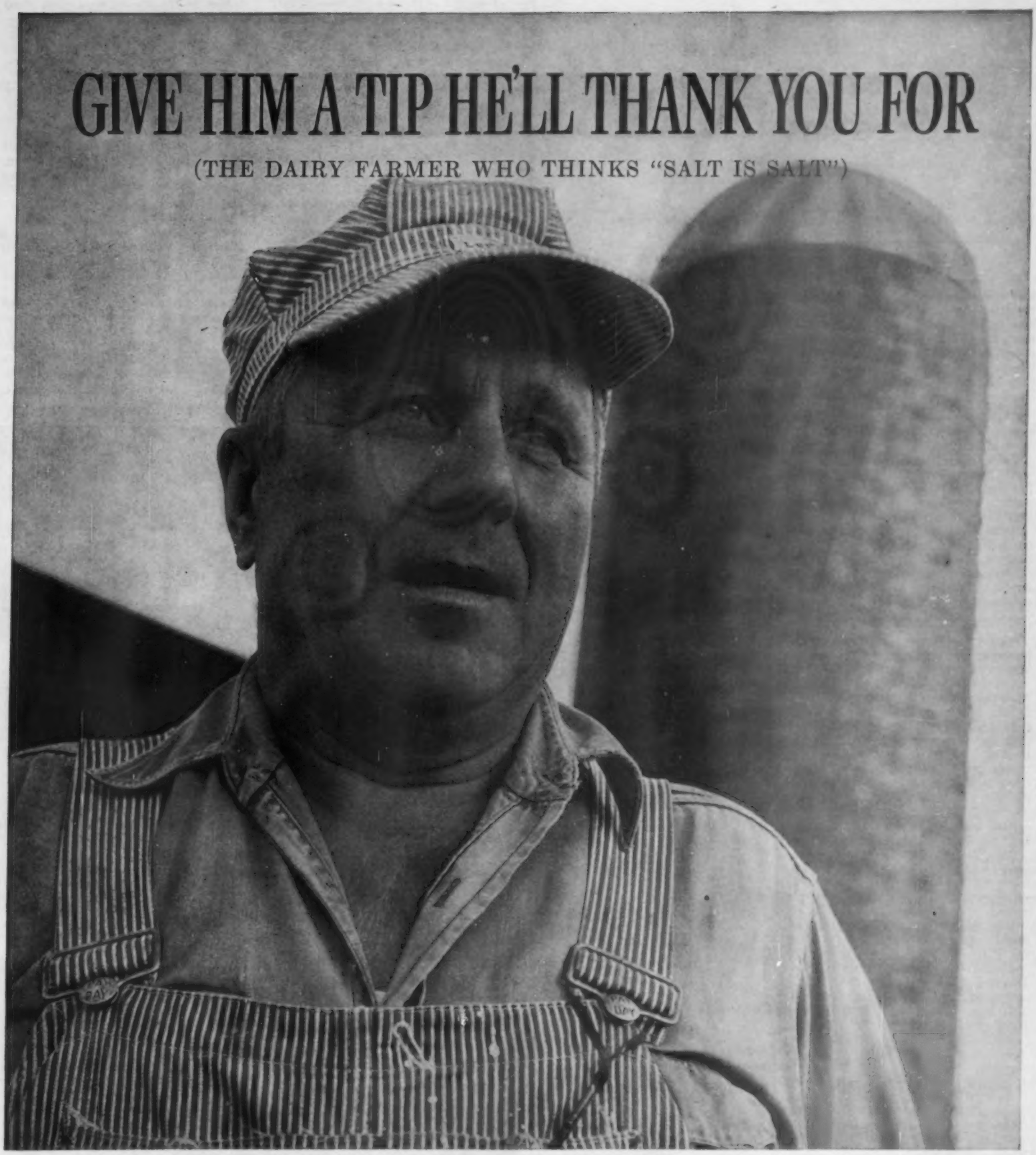

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Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

Feb. 3-4—Illinois Feed and Nutrition Conference; University of Illinois, Urbana.

Feb. 8-11—Illinois Cattle Feeder Days; University of Illinois, Dixon Springs Experiment Station, Robbs.

March 3—Illinois Swine Day; University of Illinois, Urbana.

Sept. 1-6—International Congress on Nutrition; Sheraton-Park Hotel, Washington, D.C.; sponsored by International Union of Nutritional Sciences; sec., Milton O. Lee, 9650 Wisconsin Ave., Washington 14, D.C.

Jan. 4-5 — Kansas Formula Feed Conference; Kansas State University, Manhattan, Kansas.

Jan. 4-8 — Retail Feed Dealers Training School; University of Minnesota, St. Paul; Dr. J. O. Christianson, Director of Agricultural Short Courses, Institute of Agriculture, St. Paul 1.

Jan. 5-7—National Turkey Federation; Hotel Leamington, Minneapolis; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 6—Beef Research Day; South Dakota State College, Brookings.

Jan. 14—New Jersey Poultry Disease Institute; Rutgers University, New Brunswick, N.J.; R. L. Squibb, chairman, Poultry Science Department.

Jan. 16—Florida State Poultry Producers Assn.; Angebilt Hotel, Orlando, Fla.

Jan. 17-19—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis, Ind.; sec., Fred K. Sale, 600 Board of Trade Building, Indianapolis 4, Ind.

Jan. 17-19—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 22-23 — New Mexico Grain & Feed Dealers Assn. Winter Meeting; Cole Hotel, Albuquerque; sec., Parley Jensen, P.O. Box 616, Albuquerque.

Jan. 25-27 — Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Jan. 26—Nevada Feed Conference; Education Building Auditorium, University of Nevada, Reno.

Feb. 2-3 — Agricultural Industries Forum; University of Illinois, College of Agriculture, Urbana; Department of Agricultural Economics, 805 Mumford Hall.

Feb. 2-3 — Hoosier Turkey Trot; Spring Mill State Park., Mitchell, Ind.; Indiana State Poultry Assn.; Inc., Department of Agricultural Extension, Purdue University, Lafayette, Ind.

Feb. 2-4 — American Dehydrators Assn.; Broadmoor Hotel, Colorado Springs; exec. vice pres., Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 4-5—Oregon Animal Industry Conference; Oregon State College, Corvallis, Ore.; chm., Dr. J. E. Parker, Poultry Husbandry Department.

Feb. 4-5—New Hampshire Poultry Health Conference; University of New Hampshire, Durham; Richard Warren, Poultry Department.

Feb. 8-9—Montana Nutrition Conference; Montana State College, Bozeman; chm., Dr. O. O. Thomas, Animal Industry Dept.

Feb. 8-9—Midwest Feed Manufacturers Assn.; Muehlebach Hotel, Kansas City; exec. vice pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Feb. 10-11—Pacific Northwest Feed Mill Production School; Chinook Hotel, Yakima, Wash.; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Feb. 11—Boston Grain and Flour Exchange Annual Banquet; Sheraton-Plaza Hotel, Boston; chm., Paul Sutliff, 177 Milk St., Boston, Mass.

Feb. 12 — Washington State Feed Assn.; Chinook Hotel, Yakima, Wash.; annual convention; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Feb. 12-14—Fact Finding Conference, sponsored by the Institute of American Poultry Industries; Municipal Auditorium, Kansas City, Mo.; pres., Harold M. Williams, 59 East Madison, Chicago, Ill.

Feb. 21-23 — Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo; sec., George G. Greenleaf, 5625 N. High St., P.O. Box 121, Worthington, Ohio.

Feb. 23-24—Virginia Feed & Nutrition Conference; Hotel Roanoke,

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March 7-8—Grain & Feed Dealers National Assn.; Hotel Muehlebach, Kansas City; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

March 17-18—Oregon Feed & Seed Dealers Assn.; New Sheraton Hotel, Portland, Ore.; mgr., Russ Hays, 702 Lewis Bldg., Portland, Ore.

March 17-18 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Richard D. Creek, University of Maryland, Department of Poultry Husbandry, College Park.

March 23—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati, Ohio.

March 23-24—National Broiler Industry Conference; Dinkler-Plaza Hotel, Atlanta, Ga.; vice pres., Frank Frazier, P.O. Box 368, Richmond, Va.

March 29—New Jersey Poultry Nutrition Institute; Rutgers University, New Brunswick, N.J.; R. L. Squibb, chairman, Poultry Science Department.

March 31-April 2—Pacific Dairy & Poultry Assn. Exposition and Convention; Stardust Hotel, Las Vegas, Nev.; association office, 1304 E. 7th St., Los Angeles 21, Cal.

April 1-2 — Texas Grain & Feed Assn., Shamrock Hotel, Houston; sec., Ray B. Bowden, 407 Fort Worth Club Bldg., Ft. Worth, Texas.

April 5-7—Nebraska Grain & Feed Dealers Assn.; Pershing Municipal Auditorium, Lincoln; sec., Howard W. Elm, Trust Bldg., Lincoln, Neb.

April 11-13 — Poultry and Egg National Board, LaSalle Hotel, Chicago, Ill.; mgr., Floyd Geil, 8 S. Michigan Ave., Chicago 13, Ill.

April 21-23—California Hay, Grain & Feed Dealers Assn.; Ambassador Hotel, Los Angeles; sec., John Gilmore, Blue Anchor Bldg., 1400 10th St., Sacramento 14, Cal.

CALENDAR FOR 1959-60

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April 21-23—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

April 22 — Nebraska Livestock Feeders Day; University of Nebraska, College of Agriculture, Lincoln; chm., Wm. J. Loeffel, Animal Husbandry Dept., Lincoln 3, Neb.

May 1-4—National Fisheries Institute; Hotel Fontainebleau, Miami Beach, Fla.; asst. gen. mgr., Mal Xavier, 1614 20th St. N.W., Washington 9, D.C.

May 9-11 — American Feed Manufacturers Assn.; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 9-11 — Association of American Feed Control Officials; Sheraton-Blackstone Hotel, Chicago; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

June 13-15 — American Association of Feed Microscopists; San Antonio, Texas; E. E. Brown, Office of State Chemist, Texas Agricultural Experiment Station, College Station.

June 14-15 — Alabama Poultry Industry Assn.; Municipal Auditorium (Exhibits) and Thomas Jefferson Hotel, Birmingham, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

June 14-17—NEPPCO Egg Quality School; Rutgers University, New Brunswick, N.J.; Dr. A. Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

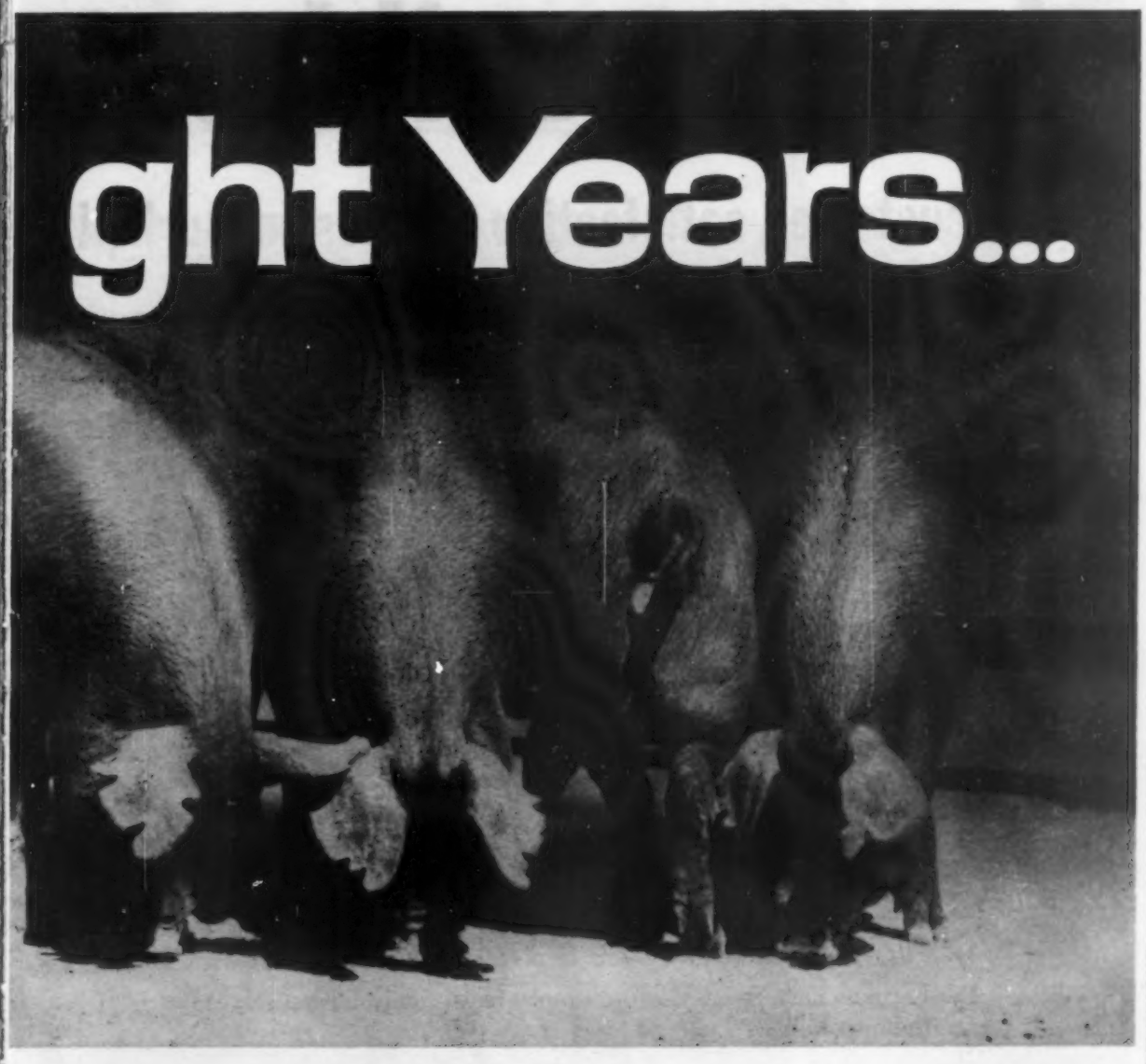
July 23-26 — Georgia Feed Assn.; General Oglethorpe Hotel, Wilmington Island, Savannah; sec., Will L. Kinard, Suite 210, 3240 Peachtree Road Bldg., Atlanta 5, Ga.

Sept. 21-23 — Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc.; pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Oct. 5-7—Texas Nutrition Conference, Texas A&M College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 11-12—Virginia State Poultry Federation convention and trade show; Hotel Roanoke, Roanoke, Virginia; sec., J. Paul Williams, 615 East Franklin Street, Richmond 19.

Oct. 12-13 — Association of American Feed Control Officials Annual Meeting; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment Station Bldg., University of Kentucky, Lexington.



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Group Recommends Life-Cycle Approach to Swine Nutrition

By FRED TUNKS
Feedstuffs Staff

AMES, IOWA—A life-cycle approach to swine nutrition in the future from all viewpoints—research, education and application—was recommended here at the recent National Swine Industry conference in one of eight workshop sessions. (Earlier story, Nov. 21 Feedstuffs.)

Need for further research in the following areas of life-cycle swine nutrition was noted:

Pre-gestation—Ration requirements and time of feeding schedule to accomplish maximum ovulation rate, subsequent conception rate and reduction in early embryonic mortality. It is realized that environmental factors (i.e., high temperatures) can affect conception rate.

Gestation—Nutritional requirements in light of newer recommendations for lower energy intakes. Studies are needed on the influence of the adequacy of the rations on the ability of new born pigs to survive under stress conditions (particularly disease).

Farrowing and lactation — Rations and feeding sequences which will stimulate maximum initial colostrum and subsequent milk flow. Taking a cue from the work of Prof. Clausen in Denmark, more work is needed on the nutritional requirements of the sow (i.e., protein level) and the effect on the eventual carcass quality of the pigs.

Baby pigs—Not only on nutrition, but also other environmental factors, which will affect maximum consumption of nutritionally adequate rations by baby pigs.

Growing-finishing swine — Nutritional goals during this period should be the production of a quality carcass economically. Additional work is needed on energy-protein relationships and amino acid balance upon carcass leanness.

Conclusions and recommendations based on information presented at other National Swine Industry conference workshops are:

BREEDING AND REPRODUCTION — Breeding programs, on-the-farm testing and central testing stations were considered.

Problems of reproduction were considered to be in these areas: (1) Litter size as determined by ovulation rate, fertilization rate and embryonic mortality; (2) variations in size of individual pigs; (3) stillborn pigs; (4) repeat breeding of sows and gilts; (5) impaired fertility following early weaning; (6) post partum uterine infections; (7) poor milking sows, and (8) variability in and lack of control of the estrual cycle.

The basic philosophy of the group concerning swine evaluation stations was that breeders of foundation stock must develop programs of testing and evaluating animals within their own herd on their own farms and that the purpose of the central station was to provide a place where breeders could bring samples of their stock for tests under common environment.

Suggestions made concerning central testing stations: (1) Breeders be allowed to test barrows for certification in test stations, (2) a longer "hardening off period" be provided for boars after completion of the test and (3) purchasers of boars from test stations be cautioned against the heavy use of these boars while they are younger than the normal breeding age of about eight months.

It was noted that there is a great need for basic research in developing ways and means of measuring muscling in the live hog.

Considerable interest was shown in on-the-farm feed conversion tests.

A summary of the breeding and reproduction session said an improvement of 5% or more has already been made in yield of lean cuts as a percentage of the carcass in foundation herds and that much further progress can be expected.

HOUSING AND EQUIPMENT—The housing and equipment group recommended that an expanded research program be initiated immediately within the nation's swine industry to determine specific needs pertaining to: (1) Types of structures most adaptable, (2) most desirable building materials, (3) floor design and construction, (4) floor space requirements for each phase of the production system, (5) types of air conditioning, (6) feeder space and correlation of feeder space with floor space, (7) feeding and watering equipment designed specifically for the needs of intensified, automated types of production, (8) feed handling, (9) manure disposal systems and (10) disinfecting equipment.

MANAGEMENT SYSTEMS — This workshop group was of the opinion, backed by farm records, that one of the major strongholds of the hog enterprise is that most of the production comes from farms where the feed is produced and where the hog business is a complement to over-all farming

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1. *A discount* on every ton of feed, when the mill provides a return-bag program.
2. *Simplified inventory* for the customer.
3. *Identification* for medicated feeds.
4. *Non-separation* of formula-ingredients.
5. *Your prices* are competitive with returnable burlap bags.
6. *Service*...you can give small customers as good delivery service as large customers (and on the same route).
7. *Bulk customers* can be served with bag-to-bulk trucks.
8. *Quantities* can be bought *as needed.*
9. Feed in burlap bags is *sanitary and free from contamination.*
10. *Accurate weights* are assured in a burlap bag.
11. *Fifty-pound* as well as 100-lb. bags can be offered.
12. Farmers have many uses for empty bags...only burlap serves them so well!

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Is strong — takes dragging, dropping, *man-handling* — any tough job on the farm.

Laughs at sudden showers — wetness or dampness can't weaken it.

Saves money — extra value from re-sale and re-use.

Gives good ventilation — keeps farm supplies and products fresh.

Saves storage space — stacks to any height without slipping.

Has 1000 uses — always in demand on the farm (popular with farm wives, too!)

operation. "Efficient operation of such a hog enterprise with attention to new developments of breeding, feeding, facilities and management will be difficult to replace by large central on-concrete operations," the group concluded.

It was stated also that large scale operations based on the complete confinement of all breeding stock and market hogs on concrete or sows on pasture "require top level management and one of the difficult problems is transfer of necessary skills to the labor force."

The group was of the opinion that within a short time such large scale production operations "might at least compete successfully with medium to high cost smaller operations." Also expressed was the opinion that large scale central operations will continue to develop where special situations permit low cost by-products to be used.

DISEASE CONTROL—The "disease-free" repopulation project carried on by the department of animal pathology of the University of Nebraska under the direction of Dr. G. A. Young was described during this workshop by one of his co-workers, James D. Caldwell.

The following methods are used in the "disease-free" project: (1) Obtain aseptic pigs, (2) rear in isolation, (3) mature on farms, (4) resume normal birth and (5) restock other farms. These five steps make it possible to obtain pigs free of: Virus pig pneumonia, atrophic rhinitis, swine dysentery, TGE and non-specific enteric diseases. Through blood testing it is also possible to determine that these pigs also remain free of brucellosis and leptospirosis.

Aseptic pigs are obtained by hysterectomy in the Nebraska project.

Mr. Caldwell described the operation this way:

The hysterectomy consists of taking a sow at 110-112 days of normal pregnancy. She is hoisted by her hind legs and lowered into a 55-gal. drum containing crushed dry ice which liberates carbon dioxide. This anesthetizes the sow in 1 minute.

A midline incision through a previously scrubbed skin exposes the near-term uterus which is severed at the cervix. The uterus is passed into a sterilized, heated hood through an antiseptic lock. The young pigs are torn from the uterus by two operators working through openings with surgically scrubbed arms and hands. The umbilical cords are clipped and severed. The pigs are wiped dry with sterile towels. The navels are tied with cotton cord and cauterized with iodine, alum solution.

These pigs are then weighed, ear-marked and placed in a carrying box for transportation to isolation quarters. Each pig is placed in an individual isolation unit and fed a modified milk-egg-mineral diet. At one week of age these pigs may be placed in

COMPARING NOTES—Prof. Hjalmar Clausen (left), one of the world's foremost authorities on swine production and head of Denmark's swine research, has a brief chat with Fred A. Weidhuner, Greenview, Ill., president of the Menard County (Ill.) Swine Improvement Assn. during the National Swine Industry Conference at Ames, Iowa, Nov. 19-20. Mr. Weidhuner has been to Denmark and seen the country's "meat-type" hog production.

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brooders of 10-12 pigs. They remain here for three weeks at which time they may be taken to repopulate clean farms. This "disease-free" stock is matured on depopulated farms and resumes natural farrowing.

Mr. Caldwell said this scientific approach to eliminate disease and then using these "disease-free" pigs to repopulate farms has met with considerable success.

In 1957, 26 disease-free gilts were taken to two Nebraska farms. Today this program has expanded so that there are now 456 breeding age female pigs on 29 farms with long waiting lists to obtain their offspring to repopulate other farms. A good share of these 29 repopulated farms were out of the pig business as they could not make a profit with their previous diseased stock.

The disease control group recommended:

1. An increase in effective swine disease research.

2. That the cooking of garbage be vigorously enforced to permit continued progress in the control of trichinosis and hog cholera, and to insure the total eradication of V. E.

3. The establishment of a National Swine Disease Committee to evaluate research and collect data.

MARKETING LIVE HOGS—The group concerned with marketing of live hogs felt there was a need for some type of industry committee to review and analyze merit systems regarding similarities and dissimilarities of methods and terminology.

It was believed that advancements have been made in: (1) Quality of hogs marketed, (2) more orderly flow of hogs to market, (3) better use of price differentials, and (4) the conception of what "meat-type" really represents.

PORK PROCESSING AND MERCHANDISING—In this area it was recommended that:

1. Complete cooking instructions inserted in pre-packaged fresh pork cuts might help young housewives learn more about meat cuts and cooking procedures.

2. "Raising quality pork for market" should be substituted for "fattening hogs for market."

3. The industry should stop apologizing for pork and not say it is the "poor man's food."

4. The industry make available to retailers such an item as fresh pork legs or hams—"an excellent cut for roasting."

5. Pork loins be made available from center cut loins from which back bone has been removed so that the roast can be carved as chops.

6. Doctors should be asked to prove their reasons for recommending non-meat diets.

7. Consumers be told more about the nutrient values of pork cuts, and that the calorie content of cooked pork is less than beef.

QUALITY GOALS IN PORK—This workshop group considered "quality" from two points of view—the consumer's and the researcher's.

A primary goal of the swine industry, as suggested by the workshop group, should be to offer the consumers pork products with a minimum ratio of fat to lean while attempting to maximize such eating qualities as tenderness, juiciness and flavor. A secondary goal: Improve the public image of pork products.

Some observations based on quality research are: (1) Palatability is related to marbling in pork loins, (2) there is a low correlation between marbling and backfat thickness, (3) firmness in pork is related to shelf-life and performance in processed pork products, (4) water binding capacity of pork and color are important to processors, but the factors contributing to these product characteristics are not well understood.

To Market Poultry Tranquilizer Abroad

SUMMIT, N.J.—CIBA's new tranquilizing feed additive for poultry is now on the market in Switzerland and will soon be introduced in other European countries, according to the pharmaceutical products firm.

The product, now available in the U.S. under the name Serpasil (reserpine premix CIBA), was developed to reduce the effects of stress on laying and growing chickens.

Dr. Hubert Meyer of CIBA. Ltd., Basle, Switzerland, recently visited the U.S. plant here to discuss the international marketing approach.

NEW GRAIN ELEVATOR

GOLDENDALE, WASH. — Members of the Klickitat Valley Grain Growers have approved construction of a new grain elevator at Centerville, southwest of here. The group also approved construction of a new office. The new elevator, to have a capacity of 300,000 bu., will replace the old Centerville elevator. An existing 100,000 bu. jack bin at Centerville will add to the co-op's total storage capacity. Estimated cost of the new elevator is $198,000, including land and removal of the old structure.

Did you know that Shellbuilder provides ample calcium for less than 5 cents per hen, per year?
Yes, but what's in it for me Shelly?
Don't tell me Shellbuilder's a roos.er-booster, too!
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Pure Crushed Reef Oyster Shell

TRY THE COLUMBUS heavy duty industrial ROLLER MILL AT OUR EXPENSE!

Endorsed by grain dealers, the Columbus heavy duty Roller Mill will roll all grains. Superior design, sturdy construction for years of profitable service. Four sizes—300 bushels, 600 bushels, 900 bushels, 1200 bushels per hour, with or without electric motor.

THREE MODELS:

Trailer, stationary or truck mounted

Operate the mill 10 days. If not satisfied, return it. WE WILL REFUND YOUR MONEY AND PAY RETURN FREIGHT.

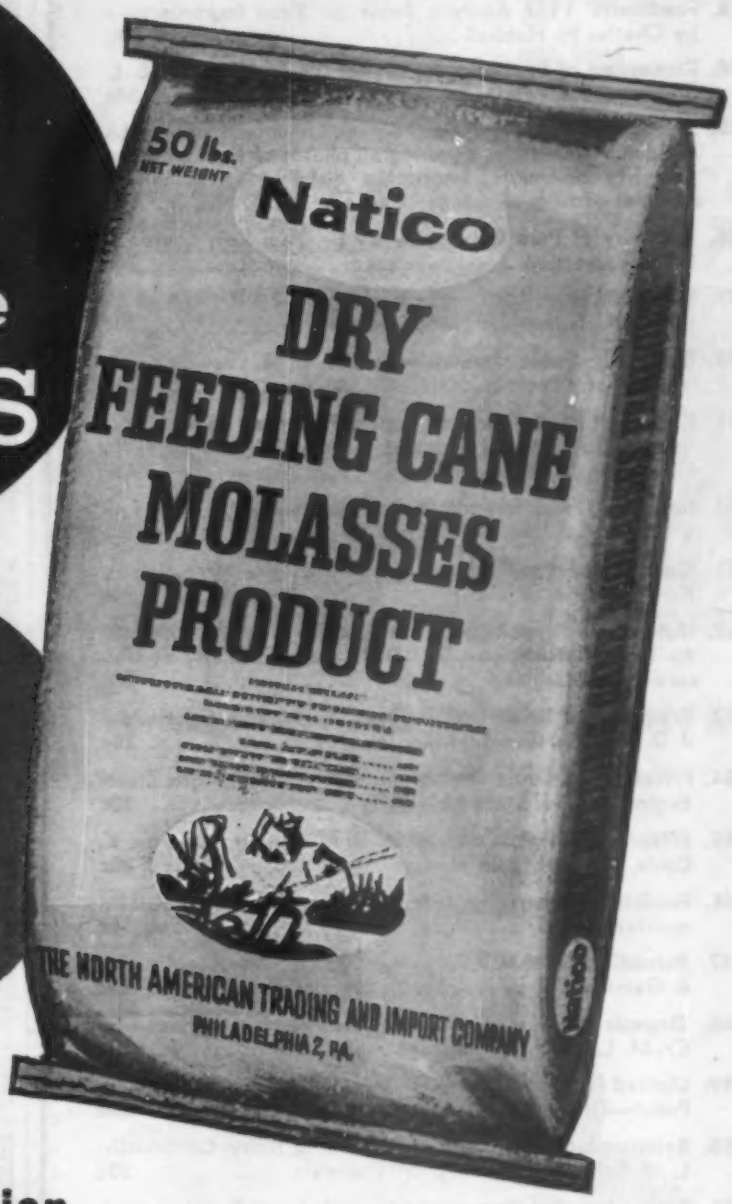
WRITE FOR PRICES

HENKE MANUFACTURING CO.
Columbus, Nebraska

Watch feeding costs go down with this richer dry molasses

Natico
DRY
Feeding Cane
MOLASSES
Product

100%
BLACKSTRAP MOLASSES!



offers more profitable production

Now—add the richest dry molasses to your feed! NATICO, the all sugar-cane molasses product. NATICO adds attractive new color and fragrance to feed, even makes dry home-grown grains and roughages tastier to livestock. Try it and watch feeding costs go down while feeding efficiency goes up. Remember—something wonderful happens when you add NATICO!

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The following reprints of articles which have appeared in Feedstuffs may be obtained on order from Feedstuffs' Reader Service Department:

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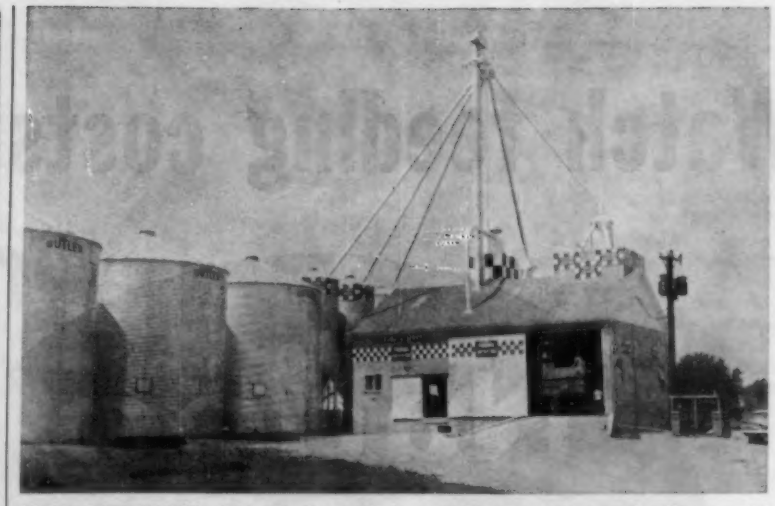


MILL EXTERIOR—This is the exterior of the new Strong & Strong mill on the outskirts of Earlville, Ill. The firm has a grain elevator and store in downtown Earlville and also an elevator at Rollo, Ill. It also is putting in a custom mill at Ottawa, Ill.

New Feed Mill Specializes in Custom Mixing and Grain Bank Operations

By Al P. Nelson
Feedstuffs Special Writer

A new $50,000 feed mill, geared to accommodate the farmer who has grain to utilize in his feed program, is being operated by Strong & Strong at Earlville, Ill.

Bob Strong, manager, produces four registered finished hog feeds for farmers in the area and also by appointment laying, pullet developer, sheep, milking and growing heifer rations and cattle growing, fattening and finishing rations. All are on Check-R-Mix programs and coordinated, if the feeder wishes, with an extensive grain bank deal.

Put into operation last February, after a series of dealer-feeder meetings, the new Strong & Strong mill has worked its grinding and mixing charges up to over $1,700 per month. Previously, Strong & Strong had no custom mill facilities. All Purina bag and bulk feeds were hauled out of Bloomington to customers of the feed store and elevator at Earlville, to a store and elevator at Rollo, and to one at Ottawa, Ill. R. A. Strong, founder of the company and his sons, Bob and Bill, are partners in the Strong mill and stores.

The new Earlville mill is a pre-engineered package mill, made and installed by Prater Pulverizer Co., Chicago. It is planned for future expansion, says Bob Strong, and additional equipment will be installed as needed.

The new mill includes four 30-ton bulk bins for concentrate storage (Kilby) and also three 1,100 bu. grain bins. They are placed outside the mill.

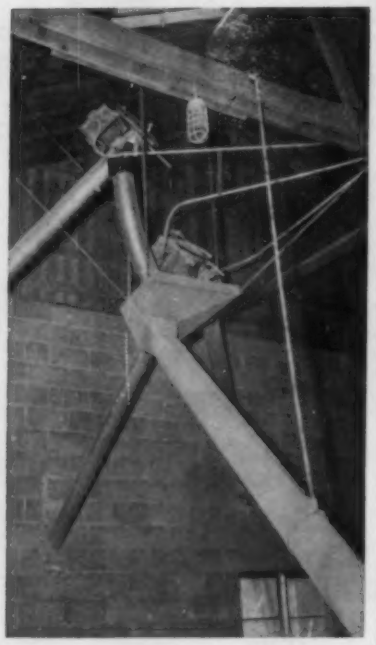
Concentrates which come in by rail are dumped from the hopper car into a small pit between the rails. Here an under-the-track conveyor belt takes them to a bucket elevator which raises them 85 ft., and then they move by gravity to the proper bin. A truck grain dump adjacent to the rail unloading facilities moves grain to the storage tanks over the same belt conveyor system

NEW MIXER — R. A. Templeton (left), Purina engineer, and Bob Strong look over the operation of a mixer at the new $50,000 feed mill at Earlville, Ill. Mr. Strong is manager of the firm.

WEIGH BUGGY—This weigh buggy enables Keith Flickinger, mill manager, to get concentrates from augers at wall from outside tanks. Then he has to push buggy only a short distance to mixer.

HOG FEEDERS—Keith Flickinger, mill manager, has several hog feeders inside mill, as well as some outside. "The inside display helps sell more," he says.

used for concentrates. Mr. Strong says that a belt conveyor was chosen because he believes it has less contamination threat and that it also is less damaging to steer pellets. About



GRAIN INTAKES — These are the grain intakes from the storage tanks. The feed mill has inside metal bin storage for four different kinds of registered hog feeds. Each of the finished feed bins holds 10 tons.

FEED STORAGE — Finished feeds are stored in overhead metal bins inside the new feed mill at Earlville, Ill., with scale below and drive through.

25 tons of pellets can be unloaded in 25 minutes.

The bucket elevator is 85 ft. high and was designed for future mill expansion needs. Now that the Strong firm is going into grain bank operations quite heavily the high elevator leg can be used most advantageously.

Inside Mill Operation

Inside the mill, concentrates are brought out of the metal bins by

RATIONS BLACKBOARDED—Rations are shown on a blackboard in the small office. "Farmers know the four types of finished hog rations we make," says Mr. Strong. "And they also can sign up on an appointment basis for other types of custom mix feeds."

ANOTHER ELEVATOR *by Hogenson*

PORTLAND FARMERS ELEVATOR CO.

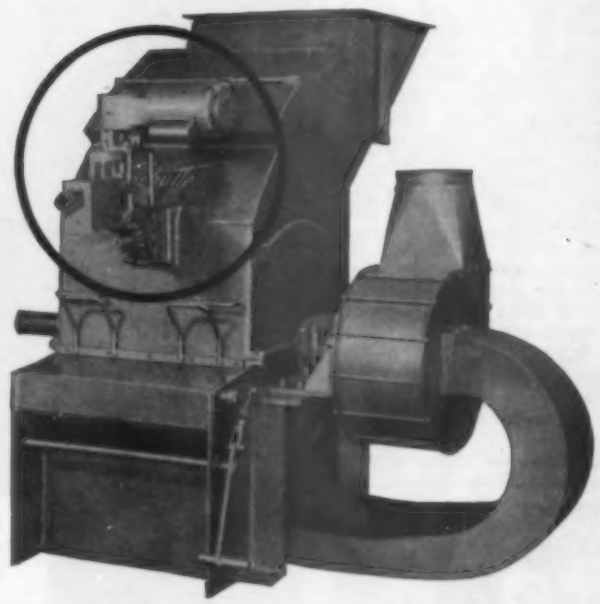
H. E. Lenaburg is manager of the Portland Farmers Elevator Company, Portland, North Dakota. Their modern plant is shown here. Originally quality-built by Hogenson, the six tanks at left were recently added by us.

★ FEED MILLS
★ ELEVATORS
★ SEED PLANTS
★ WAREHOUSES

Hogenson Construction Co.
722 FLOUR EXCHANGE MINNEAPOLIS 15, MINN.

Hoffman
for complete nutritional service
Hoffman-Taff Inc.
SPRINGFIELD, MISSOURI

NEW ADVANCED FEED CONTROL
gives you more uniform grinds at less cost



HERE'S HOW IT WORKS . . .

Now you can regulate feed flow electrically from anywhere in your plant, by simply pushing a button. This new unit assures you of constant feed control, resulting in a cooler, better, granulated grind, free from stringiness. Materials are ground in suspension against a Feed Control Plate. With the Plate wide open, you can grind hay and other roughages quickly without slugging. Take your pick of remote control or manual operation at the mill or floor above.

HERE'S HOW YOU SAVE MONEY . . .

Screens can be changed instantly without stopping the mill or raising the top, saving man hours and power costs. You don't need a separate crusher or feeder, because the new Schutte Feed Control replaces both, eliminating maintenance and replacement costs. With uniform feed flow assured, there can be no power overloads, lowering your costs still further and providing valuable protection for your motor.

GET ALL THE FACTS . . .

Write for illustrated bulletins describing Series 10 Mills (50 to 125 H.P.), New Feed Control and Eccentric Lock Screen Change feature. Schutte Pulverizer Co., Inc., 872 Bailey Ave., Buffalo 6, N. Y.

Schutte
HAMMER MILLS

GREATER LIVESTOCK POTENTIAL

LEXINGTON, KY.—Expansion of Kentucky's livestock industry could mean an additional income of $100 million or more annually, Dr. E. J. Nesius, associate director of the University of Kentucky's Extension Service, said.

Despite the fact Kentucky is a "natural" for grazing, Dr. Nesius said there aren't sufficient numbers of livestock on hand to utilize all the grass and forage grown, and even were the supply to run low, Kentuckians are well situated geographically to purchase feed inexpensively.

"Kentucky could be known as a source of fine breeding livestock for the entire country, for quality stock," he said, "but not necessarily purebred."

means of augers and loaded into a weigh buggy. They are then just a few feet from the 3-ton Prater mixer. This arrangement saves time and steps. When feed volume warrants, a hopper scale will be added, reports Mr. Strong.

Grain is brought from the firm's Rollo, Ill., or Earlville, Ill., elevators or from farmers. It is put into a dual degree drag feeder, ground, then blown into the 1,100 bu. Kilby grain bins for use in rations. The mill is equipped with a 100 h.p. hammer mill.

Since the plant is laid out with minimum equipment, provision has been made for a wooden floor in the area where a second mixer can be added. The Strong & Strong firm also can add a 40 h.p. fan to the hammermill, too, when conditions warrant.

The feed mill has inside metal bin storage for four different kinds of faster moving registered hog feeds. The Strong & Strong bulk truck can drive inside the mill and get a weighed load of bulk feed quickly from the bins. Or a farmer can come in and get his own feed to haul. Mr. Strong says that six additional upper area bins will be added to store completed feeds when needed. Each of the present finished feed bins holds 10 tons. A 20-ton Fairbanks scale is used in connection with this operation.

One man, Keith Flickinger, the mill manager, operates the feed plant. Inside the mill at the present time, there is room for the display of several types of hog feeders. Since Strong & Strong sells a lot of hog feed, Keith has time to show the farmers the feeders when they come to confer with him or to visit the plant.

"Because we make feeds only on one program, our mill can make sizable continuous runs," reports Mr. Strong. "Farmers know the four types of finished hog rations we make, and they also can sign up on an appointment basis for other types of custom mix feeds. This plan enables us to schedule our production and eliminate a lot of waste time which would accrue under the older custom mix plan in operation in some other types of mills. Our sales organization—and we've got an effective one—has the job of selling the farmers on the Check-R-Mix program, and then the mill fills the orders."

So well pleased is Bob Strong with the new feed plant that he convinced his brother-partner Bill at Ottawa to install a similar mill.

Grain Bank Plan

Under the Strong & Strong grain bank plan, all corn taken in is brought down to 15.5% moisture content and must grade No. 2. Oats must be 36 lb. or heavier. All drying is done at the Earlville elevator. Charges are ½¢ per bu. for each ½% moisture above 15.5%. The farmer also is charged 2¢ per bu. for all grain delivered to the bank to cover insurance and mill shrinkage.

If the feeder does not use all of the grain in the grain bank for complete rations, but sells it as grain, he is charged 1½¢ per bu. per month storage for the time the grain is in the bank. The total grinding and mixing charges for feed are $3.50 per ton and are included in the amount of the feed.

Rates on delivery are: 1-2.9 tons, $3 per ton; 3-4.9 tons, $2 per ton, and 5 tons or more, $1 per ton.

Before Bob Strong decided to erect his new mill and institute a grain bank program, he and his assistants travelled through many Indiana, Illinois and Ohio communities inspecting various mills and grain bank operations. He became convinced, he said, that in grain belt areas, a specialized custom mill and a grain bank plan would work well in the community. The results obtained thus far, show that it does, he added.

This feed firm keeps accurate records on the feeding results obtained by many of its customers, said Mr. Strong. These detailed cost records are proof to customers and to prospects that profitable gains can be secured when livestock are fed scientifically, he noted. Two Strong & Strong field men constantly visit hog and cattle raisers in the Earlville area carrying the message of scientific feeding results.

Mr. Strong holds an appreciation dinner at Earlville for his firm's customers each year. At that time, cost records of various hog and cattle herds are reviewed in detail. Specific meetings like this, Mr. Strong feels, give farmers actual proof and help in a scientific feeding program.

- Chemical Analyses
- Vitamin Assays
- Drug Assays
- Spectrographic Analyses
- Chick Feeding Tests
- Consultation
- Formula Reviews

Write for Schedule of Charges

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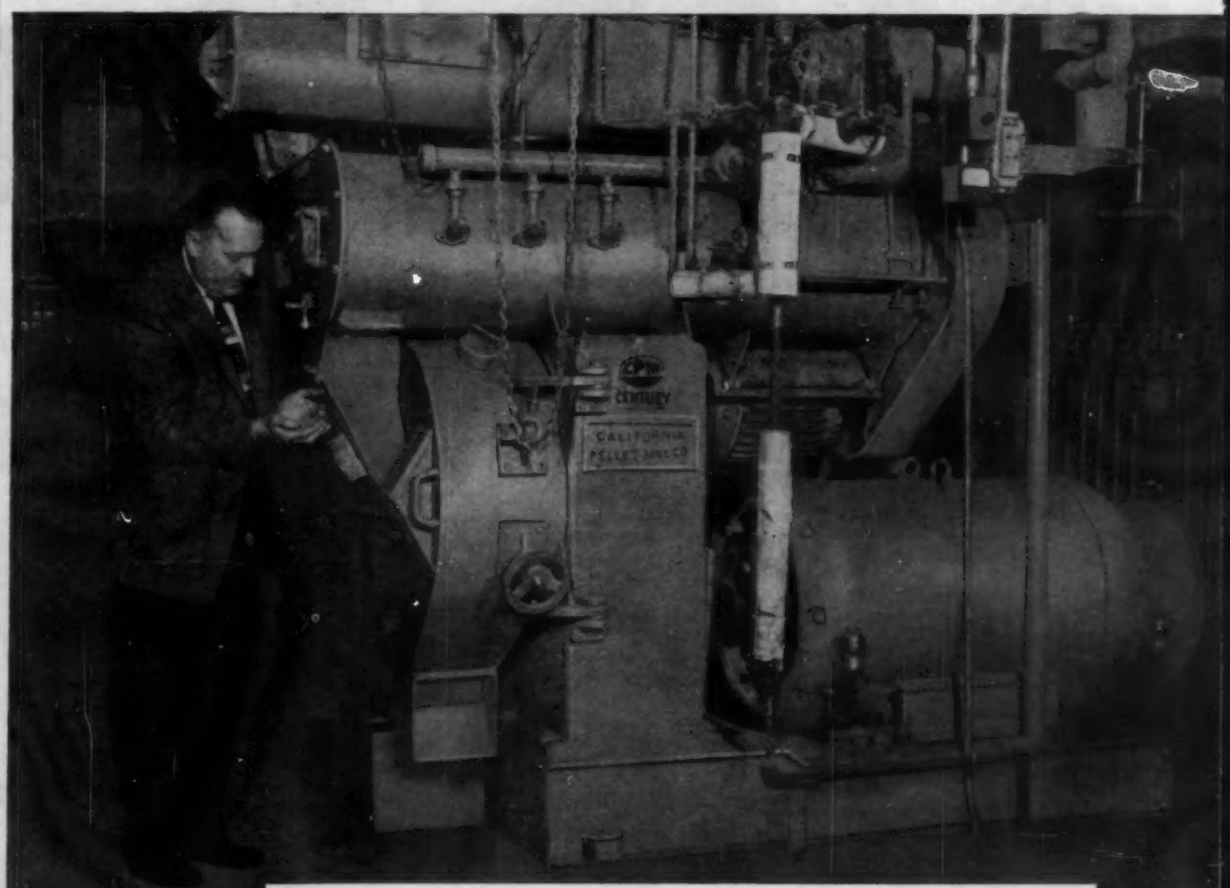
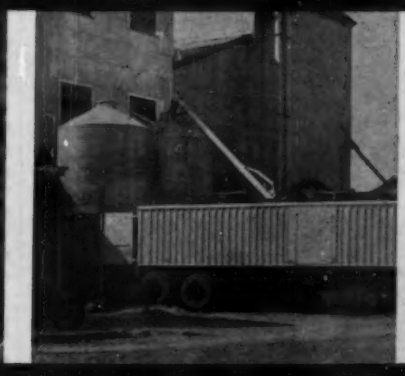


Mr. Will Brooks, Plant Manager at the Springfield Mill, Illinois Farm Supply Company, examines FS Brand "Perfect 30 Cattle Pellets," now in regular, high-capacity production on a battery of three standard CPM "CENTURY" M.P. Pellet Mills.



STRONG, FIRM MOLASSES PELLETS

Hard, uniform CPM molasses pellets resist breakage, disintegration and loss, provide highest feeding economy. Here is a truly high grade feed.

FREE FLOWING IN BULK HANDLING

Molasses pellets offer every advantage as an easy-to-handle feed. They save storage space, reduce handling time and cost.

STACK 'EM UP—PELLETS WON'T STICK!

Stack bags 10 high or more! CPM-made molasses pellets won't stick together, mash or solidify. They stay free-flowing, non-sticky, easy-to-handle.

Broiler Council Notes 1960 Campaign Plans For Crisped Chicken

RICHMOND, VA.—"The 1960 Corn Crisped Chicken Campaign next February and March will be bigger and better because of the sales success of the 1959 version of this related item promotion," according to a National Broiler Council announcement. The announcement will be made to retailers in a few weeks that the promotion is "back again because it moved merchandise. . . ."

The promotion emphasizes a way to prepare crisp chicken without frying and with no shortening and no turning.

Advertising by the Corn Crisped Chicken partners will be stepped up for 1960 and will include six different coast-to-coast television shows, full page color ads in magazines and newspaper supplements and radio.

According to Frank Frazier, National Broiler Council executive vice president, one of the major differences in the 1960 version of the promotion will be the intensive effort at the retail level and tools the sales forces of the partners will be working with. Store materials will include window and wall posters, stack cards and shelf talkers with recipes.

Full scale publicity will be provided by the National Broiler Council and the time-saving, low-calorie stories will be particularly stressed in these channels. In addition to this the Corn Crisped Chicken recipe will appear on Pet Milk cans and cartons of Kellogg's Corn Flakes and Corn Flake Crumbs.

Partners in this promotion are Reynolds Wrap, Pet Milk, Kellogg Corn Flake Crumbs and the National Broiler Council, the same four 1959 sponsors, plus a new addition, Accent.

93-Year-Old Iowa Mill Continues to Use Water Wheels

LYNNVILLE, IOWA—One of the oldest mills in the U.S. is the mill here in the little town of Lynnville, Iowa. Lynnville has a population of 400 persons and is located near New Sharon in the southeastern corner of the state. The Lynnville mill is more than 93 years old, having been established in 1866.

At least that's the comparative estimate of Dale Snyder, sales manager of the Cedar Rapids plant of Hubbard Milling Co., which is another "oldtimer." Hubbard recently passed its 81st birthday. Mr. Snyder points out that if the Lynnville mill isn't the oldest in the country, "It's probably the oldest one in the U.S. with still-operative water wheels."

Mr. Snyder ferreted out his information in a business call upon Harris (Huck) Wagaman, who has been a long-time Hubbard Sunshine feed and mix customer.

LONG-TIME MILL OPERATORS—Two representatives of two of the oldest mills in the country got together recently to compare notes and products. Huck Wagaman (left) represents the third generation to operate the 93-year-old Lynnville, Iowa, mill, believed to be one of the oldest still operative in the nation. With Mr. Wagaman is Dale Snyder, sales manager of the Cedar Rapids feed plant of Hubbard Milling Co. Hubbard is 81 years old.

Huck Wagaman is the third continuous generation of Wagamans to run the mill, which was founded by John Sparks at the close of the Civil War.

But the big wheels no longer turn within the wooden walls erected by the pioneer Sparks, nor do the river waters roll over the original dam. The last vestiges of Mr. Sparks' early industry were replaced during the regime of John A. (Fred) Wagaman, who joined his father, William K. Wagaman, in the enterprise in 1905. The elder Wagaman had purchased the property in 1898. It was Fred who kept the machinery up to date, however, and who knocked out the original wooden dam in 1918, replacing it with the present concrete one.

MILL SOLD

MAYVILLE, WIS.—Knowles Produce Co. recently took over the Glenn Milling Co., which the Knowles firm recently purchased from Mr. and Mrs. Emmett Glenn. The new owners installed Otto Bleifuss as manager. The mill now is being changed over for bulk feed handling.

Produce Perfect Pellets

with Any Molasses Content up to 30%

on the Standard CPM

"CENTURY" M.P.

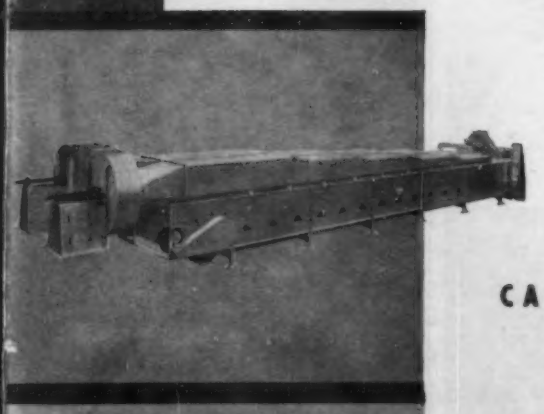
PELLET MILL

No special adapter head or other pellet mill is required to make molasses pellets

If your plans call for pellet feeds with molasses content up to 30%, it will pay you to investigate the California "CENTURY" M.P. (Mixer-Pelleter) high-capacity, high-horsepower Pellet Mill.

This is a multi-purpose CPM standard unit that handles *any* type of pelleting feed mix, whether it contains molasses or not. Extremely versatile, this CPM model does away with the need for a special pellet mill to produce high level molasses feeds only. Nor does it require an adapter head or other cumbersome changeover to switch from pelleting hard type pellets to molasses pellets. Where other machines may require a minimum of 30% molasses to operate properly, the "CENTURY" M.P. produces highest quality pellets at lowest cost per ton *regardless* of molasses content – from 0 to 30%!

Get all the facts on this remarkable mill today. See how you can cut costs, boost profits. Call your CPM representative or write us direct.



EFFICIENT CPM HORIZONTAL COOLER
This CPM self-cleaning horizontal cooler is designed for efficient handling of molasses pellets, regardless of molasses content, without jamming or breaking pellets.

CPM CALIFORNIA PELLET MILLS

CALIFORNIA PELLET MILL COMPANY

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BoDEE (Mineral) STABLE VITAMINS D
Vita D that will not decompose when combined with minerals.

BoDEE
Vitamin D-2 or D-3 in dry, oil or water dispersible forms.

BoA-S and Bo-A
Stable dry vitamin A products.

BHT
Oil soluble Vitamin protector and pigmentation aid.

HYDROPOID
Dry, free-flowing partially hydrogenated animal fat.

XANTHOPHYLL CONCENTRATES
For better poultry pigmentation.

CLOROFOLEN
Effective dog food deodorant.

ENZYMATIC SYSTEMS

Bowman Feed Products, Inc.
130 Central Ave. HOLLAND, MICH.
13160 Ortley Place VAN NUYS, CALIF.

You Too...
CAN SEE THE DIFFERENCE!
Compare!

The SWING IS TO "SNOW FLAKE"

WRITE, WIRE, OR 'PHONE FOR INFORMATION AND SAMPLES

MAYO SHELL CORP.
P. O. BOX 784 • HOUSTON, TEXAS

FEED MILL SCHOOL — Included in the 30 mill owners, managers and operators from Minnesota, Iowa, South Dakota and Illinois attending the training school recently at Hubbard Milling Co. research farm in Mankato, Minn., were the following:

Front row (left to right), Elmer Schottenbauer, Wabasso; A. A. Nickerson, Illinois City, Ill.; Jerry Voss, Clarksville, Iowa; Aage Mickelsen, Alden, Minn.; Jack Schaefer, Brookings, S.D.; Marlan Julsrud, Barnesville, Minn.; second row, Merle Moser, Edgewood, Iowa; Gerhard Lammers, Breda, Iowa; Jim Tix, Rosemount, Minn.; Jerome Fluegel, Rosemount, Minn.; William Walter, Williamsburg, Iowa; Egon Kjeer, Gowrie, Iowa; Vernon Cooper, Fergus Falls, Minn.; third row, Maurice Adkisson, New Sharon, Iowa; Glen M. Gerard, Taintor, Iowa; Wendell Jimmerson, Fergus Falls, Minn.; Walter Bangs, Alden, Minn.; Louie Kobet, Alta Vista, Iowa; Omer Wigern, Kiester, Minn.; LeRoy Sumption, Rosholt, S.D.; Melvin Meng, Truman, Minn.; fourth row, Dick Breiter, Madelia, Minn.; Paul Breiter, Madelia, Minn.; Ken Champion, Altoona, Iowa; Edwin Reiter, Wall Lake, Iowa; Richard Gilbertson, Arco, Minn.; Herman Weise, Okabena, Minn.; Robert Werner, Delhi, Minn.; Howard Nelson, Jefferson, Iowa, and Roger Brettmann, Waverly, Iowa.

30 Attend Feed Mill School in Minnesota

MANKATO, MINN. — Thirty feed mill owners, managers and operators from Minnesota, Iowa, South Dakota and Illinois attended a training school held at the Hubbard Milling Co. research farm here recently.

The two-day school, which included workshops on feeding and management of poultry and livestock, was directed by Carl Todtleben, sales training assistant. Other personnel on the program included George Patrias, director of nutrition and research; Don Mohrman, purchasing agent; Don Madden, Mankato division sales manager; Norman Dewes, feed division consultant; Vern Lundin, director of advertising and public relations, and Elton Klaustermeier, sales assistant.

This school was the final one for 1959, one of a series conducted by Hubbard over the last five years. The program is scheduled to continue in 1960.

Golby Bag Addition

PORTLAND, ORE. — Ralph Peyton, former owner of Peyton Bag Co., Portland and Spokane, announces that he is joining the sales staff of Golby Bag Co., Portland.

In his new capacity Mr. Peyton will service the entire Northwest trade. Mr. Peyton started in the used bag business when he went to work for the old Noon Bag Co., Portland. After seven years with that firm, he established Peyton Bag.

Because of the Portland urban renewal program, Golby Bag will be required to move its location within the next year. The firm plans to acquire a new, modern facility which will be used not only for the manufacturing of new bags but also to utilize all the equipment and facilities of the former Peyton Bag Co. Portland plant.

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UP OR DOWN

By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Egg Price Prospects

Egg prices this past year hit the lowest levels since 1942. Farmers have responded by reducing the number of layers. It is estimated that there will be 3-4% fewer layers on farms Jan. 1, 1960, than on the same date a year earlier.

As a consequence, egg production for the first six months of 1960 is expected to be lower than in 1959. However, the reduction in number of layers will be offset in part by increased production per hen. Over-all, this increase has amounted to 1-2% per year. Currently the rate of lay is reported to average nationally slightly over 200 eggs per hen and so far into 1959, is up 2% over 1958.

Egg-Feed Ratio Down

One indicator of profits from producing eggs is the egg-feed price ratio. This is the pounds of feed you can buy from the money you get by selling a dozen eggs. As you can see from Exhibit 1, this ratio has gone up one year and down the next since the end of World War II with 1955 an exception.

Take a good look at this price ratio chart. It is a saw-tooth picture with ratios up one year and down the next. If past patterns hold, 1960 should be an "up" year.

Here is how to read the chart: The solid line shows per cent change from the year earlier. For example, 1959 is estimated at about the —15 level. This means that the egg-feed price ratio was 15% below 1958, and is shown below the "0" line on the chart.

Will egg prices in 1960 be higher than during the same months of 1959? Of course, no one knows this answer for certain. But you can see the pattern Kansas State economists believe egg prices will follow through July of 1960 by looking at Exhibit 2.

Prices during winter months are expected to hold fairly close to prices received a year earlier. Prices aren't expected to drop as much during spring and summer of 1960 as they did in 1959.

EXHIBIT 1. Change in Egg-Feed Price Ratio from Previous Year, U.S., Since 1945

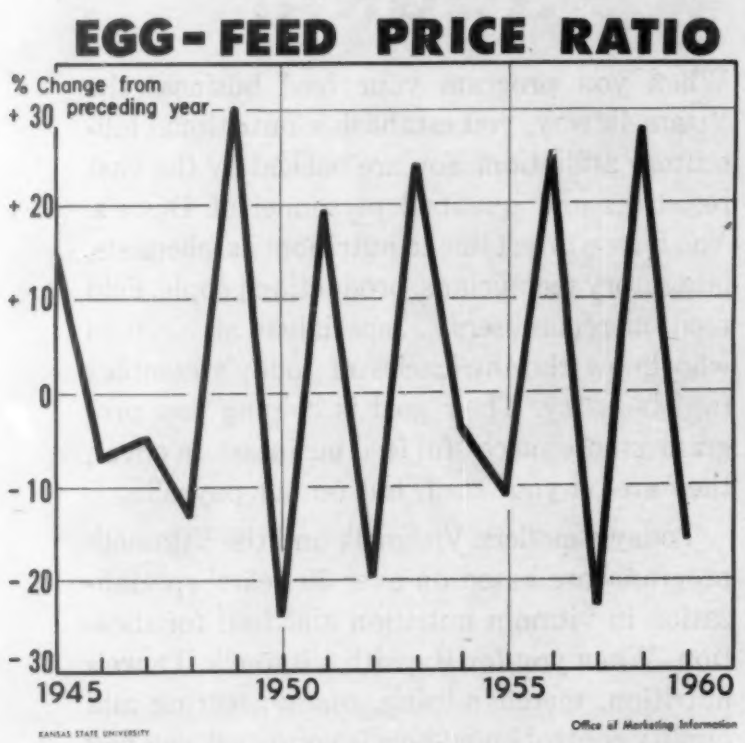
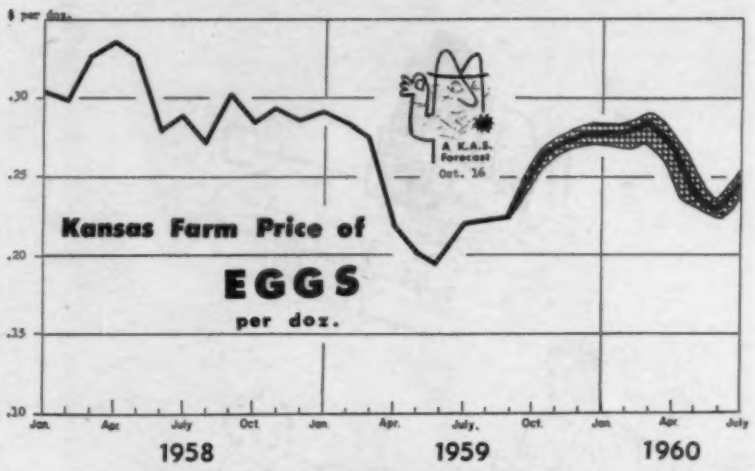


EXHIBIT 2. Egg Price Forecast, 1959-60



Ewes Usually Respond To Winter Supplement

BROOKINGS, S.D. — Range ewes respond to supplements of both protein and energy during most winters, according to research at the South Dakota State College Agricultural Experiment Station.

J. K. Lewis, range management researcher, reports that the response of ewes to winter supplemental feeding is influenced by summer grazing intensity and the condition of the winter range. Year-to-year variations have been large.

Lamb weaning weights appear to be influenced most by the condition of the ewes' summer range, while the lamb crop born and weaned appears most affected by the winter feeding.

Ewes winter-grazed on deferred range in excellent condition and fed two thirds pound of a 20% protein supplement daily from Nov. 1 to lambing showed the best response on four factors. They rated at the top for best winter ewe gain, grease fleece weight, lamb crop born and weaned and lamb weight weaned per ewe bred. Those on either one third pound of a 20 or 40% supplement for the same period rated intermediate. Lowest was the group on ⅓ lb. of a 40% supplement for only the last six weeks of pregnancy.

EGG FIRM INCORPORATED

LITTLE ROCK, ARK. — Cam-Ark Egg Co., Inc., Camden, Ark., has filed articles of incorporation to operate a poultry and egg business. The firm was authorized 500 shares of $100 par value stock and said it had $15,000 paid-in capital. Incorporators are Willard T. Russell, Tulsa, Okla., and Harry E. and Pauline Lindsey, Camden. Harry Lindsey is listed as the firm's agent.

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Arkansas Turkey Producers and Feed Men Undecided About Future

By DAVID MARTIN
Feedstuffs Special Writer

BERRYVILLE, ARK. — Producers and feed men attending the 10th annual convention of the Arkansas Turkey Federation here were generally undecided in their opinions on the future of the industry.

(A story on the convention program appeared in Feedstuffs Dec. 12.)

Many said that it is still "a little too early" to make predictions on 1960, but most agreed that profits next year will depend almost entirely on the amount of production and on the timing of marketing.

Some expressed the view that the market will be lower—if poults can be obtained.

Poult Shortage

Growers said there is a shortage of poults in this area because many were sold on the high consumer market and because many hens being held for breeder flocks were hit with CRD.

One feedman, who asked not to be identified, said he found in a recent trip through Oklahoma and Texas that those states are also cutting back egg production and hatchings.

Fred Norris, a feeder and breeding hen operator at nearby Green Forest, seemed to sum up the situation of the breeder farmers this way:

"I had to sell all my flocks—at a good profit, of course—but I looked for two weeks before I found any suitable breeder hens. My broker told me that hens are really in short supply in this area—good breeders, at least."

Mr. Norris said he plans to run about 1,200 breeders and that breeder flocks in his area will be reduced.

Smaller Flocks

The assistant county agent at Berryville said he believes breeder flocks in this area will be smaller than in recent years.

Most of the delegates polled said they believe profits and prices in 1960 will average about like those of 1959.

W. G. McNeese, DeQueen, in southwest Arkansas, said he thinks 1960 prices and profits will be about the same as this year. He said: "It is a bit too early to try to secondguess the future," adding that he could make a better decision when he sees the December report on the number of birds in storage.

One of the main topics of conversation among turkeymen attending the conference was the recent cranberry episode and its relation to the use of drug additives in feed.

Additive Regulations

Some were outspoken in their opinion that the Food and Drug Administration may soon start stricter enforcement of additive regulations.

One large range operator said he was afraid FDA would "catch growers with birds which could never be marketed." He said he is going to watch the news reports closely for any indication of a possible FDA move toward the feed industry.

The convention heard two speakers say they believe further FDA action is pending on feed additives.

Another topic which stirred up a great deal of interest was a plea by a speaker, Ozzie Franz of the Franz Poultry Plants at Green Forest and Mammoth Springs, Ark., for year around marketing.

Delegates generally applauded his plan to even out marketings instead of concentrating sales around Thanksgiving and Christmas. "Mr. Franz has a great idea if he can persuade growers to follow it," said one grower, "but I'm afraid everyone will hold for the late market next year because it was the highest market this year."

Another producer said he agreed with Mr. Franz and Alex Gordeuk, Hales & Hunter Co., Chicago, another speaker, that birds should be marketed the year around.

Confinement Feeding

Discussions at the convention indicate that a number of changes are coming in the industry, including the possible use of pole type sheds for confinement feeding and the predicted movement of the turkey production center from the Midwest to the Southwest.

While most Ozark Mountain area producers said they will continue to use ranges for finishing birds, some admitted that pole type operations would be needed for year around marketing.

"I could build a shed comparatively cheap," one grower said, "but it would take about 35,000 sq. ft. floor space for 5,000 birds."

"I believe disease problems will be multiplied with confinement feeding," another operator added.

Substituting Milo

Behind the predicted movement of the large turkey producing region to the Southwest is the increasing use of milo as a substitute for corn in rations.

A Springdale, Ark., feed broker said his demand for milo has been increasing steadily. He said that for most of the year, milo can be used more economically in this area than corn.

Mr. Gordeuk predicted the shift in turkey population, saying the proximity to milo and better conditions for year around confinement growing were the principal reasons. He cited an example in which 350 bu. milo were produced on a single acre in Texas through extensive irrigation.

Many delegates concluded that the outlook for expansion is greater in the Southwest than at any time in history.

While delegates could not agree on future price and management trends, most agreed on one thing: Integration is here to stay for a long time.

"The way things look, growers can't afford to risk their capital in independent operations," an integrator commented. This seemed to generally sum up the feelings about integration.

The majority of turkeys produced in this area this year were grown under integration contracts calling for a guarantee of 30¢ a bird plus one half of the profits.

Officials see no change in the present contract terms, because growers, noting profits their neighbors made this year, are eager to obtain flocks.

Feed dealers and processors generally control turkey operations in northwest Arkansas, and officials see no departure from this trend.

Someone suggested that processors may increase their own feeding operations in an effort to ensure a supply of birds for markets the year around. But this was discounted in discussions with integrators, growers and others.

Handle Together

Another lively conversational topic among the delegates was whether turkeys and poultry can be handled together. A number of speakers claimed farmers who do this are flirting with danger, but some of the growers disagreed.

"We can't afford to maintain separate brooder houses," one grower shouted out during a panel discussion.

Mr. Gordeuk said flatly that turkeys and chickens cannot be handled together because the chickens touch off serious disease problems in turkeys.

The grower asked, "How are we to operate then?"

Charles L. Shippee

MERCHANDISER—Charles L. Shippee, feed ingredient and grain merchandiser, has joined Geisel Grain Co., Kansas City, to set up and operate a feed merchandising department for the firm. (Feedstuffs, Dec. 5). He has been with Herring Sales Co. for the past 11 years.

AWARD WINNERS—Highest Foxbilt Feeds sales award winners are shown (left to right): Mr. and Mrs. Martin Weiler; Mr. and Mrs. Leonard Prinz; Mr. and Mrs. Robert Kibler, Mr. and Mrs. Joe Bottiger, Mr. and Mrs. J. B. Halferty, Mr. and Mrs. Carl Halferty, Mr. and Mrs. John Davis, Mr. and Mrs. Leon Geiner and Mr. and Mrs. Don Christ.

Foxbilt Feeds Honors Dealers and Salesmen

DES MOINES, IOWA—More than 210 dealers and sales representatives were honored by Foxbilt Feeds at the company's annual Toppers' Party here.

The awards were made following a dinner and floor show for the award winners and their wives. J. K. Lepley, vice president and director of sales, presented the highest "5-Star Topper Awards" to the following salesmen: Leo Geiner, Klemme, Iowa; Robert Kibler, Hiawatha, Kansas, and John Davis, Plattsburg, Mo.

Dealers awarded included: Prinz and Weiler Feed & Grain Co., West Point, Neb., represented by Martin Weiler and Leonard Prinz; Farmers Elevator Co., Robinson and Leona, Kansas, represented by Walter Ditzfeld and Joe Bottiger; Halferty Brothers, Plattsburg, Mo., represented by Carl and J. B. Halferty, and Don's Milling Service, Lakota, Iowa, represented by Don Christ.

Dale Buckmaster, Fremont, Neb., was named top division manager in the company.

Nearly 400 people attended the awards celebration, the largest in the history of the company, according to Edwin L. Fox, president. A dance was held following the awards presentation.

CREDIT

(Continued from page 16)

eggs may be desirable if the market offers an adequate premium.

Mature body weight of hens should range 4 to 4½ lb., or somewhat heavier in colder areas.

Feed conversion can range from 3.8 lb. per doz. to 4.5 lb., depending on energy level, size of birds and other factors.

With modern birds, culling need not be extensive, barring major disease outbreaks.

Mortality of 11 to 15% per year may be expected. Morbidity has a greater influence on production than actual death losses.

Production should range 90 to 95% A quality or better throughout the year.

Dr. Richard Phillips, department of economics and sociology, Iowa State University, discussed the effect of price cuts on earnings, noting that a large increase in volume usually is necessary to offset a relatively small cut in price.

He also described how an outside serviceman can increase a dealer's profits. "The job of the serviceman is to see that farmers do a better job of using your products," he said. "He must be a key employee and really represent your business. He should be familiar with total farm problems and be up to date on technical matters.

"A serviceman will increase volume because he makes it more secure by gaining the confidence of customers."

A good serviceman, he said, should be of above average intelligence, have an interest in farm people, have a college education or its equivalent, a personality that earns the respect of farmers, ambition, the ability to organize his own work and to interpret technical data. Dr. Phillips showed, with actual experience figures, how a serviceman had boosted net income by 6.6% for a dealer.

Poultry Outlook

Dr. Ralph Baker of Penn State University—who had just come to Minneapolis from Chicago where on Dec. 8 he and other members of the Poultry Survey Committee released its fourth quarter report on the 1960 outlook—read the report before the "Quickie" audience and made additional comments as he went along.

Asked about the recent price strength in broilers, he said broiler prices are getting back to where they should be in relationship to quantity. He said the real question is why broiler prices have been so low in the past.

With current turkey prices above expected levels, turkey growers are pleased, Dr. Baker said, but some are unhappy because they didn't sell at the right time.

A question from the floor prompted a discussion about discrepancies in comparing reported layer flock numbers with reported market receipt of eggs. Dr. Baker commented that "you can always be sure that in a period of rapid change that there will be a lag in reports from the field."

In a film slide presentation, "A Look at Your Competition," Dr. Bak-

er described types of programs that are being used throughout the nation to coordinate the production and marketing of eggs.

He said there would be additional types of programs in the future, but he learned in 1958 while making a national study for the U.S. Department of Agriculture that most come under one of three classifications: Contract marketing, contract production or owner-integrated.

He warned upper midwesterners that they must produce eggs for a market. "You can't just send eggs to New York and expect to get good prices. If you just ship your eggs to New York, somebody's got to buy them—and the price goes down. . . . Don't blame Urner-Barry for setting prices."

Dr. Baker remarked that egg producers in the Midwest and some operators in the South have got to realize that they must produce according to the market, not market according to production.

Egg Production Costs

Dr. Robert W. Berg, poultry specialist, University of Minnesota, suggested that egg producers compare their costs of raising replacements and producing eggs with average costs developed from a recent University of Minnesota study.

"Efficient, low-cost egg production is essential for a profitable laying operation in Minnesota," he said. "Try to spot the weak points in your program."

He pointed out that the average total cost of producing eggs in Minnesota—based on a flock size of 300-500 hens, rate of lay of 216 eggs per hen and a death loss of 15% during the laying year—is 34.3¢ doz. eggs or $6.19 per hen.

Average cost of raising replacements, figuring a 15% death loss, is $1.88 per pullet housed.

Dr. Berg pointed out that the $1.88 per pullet housed includes the chick, feed, miscellaneous cost, interest, depreciation and labor at $1 an hour.

He said that with a 15% death loss in the replacement as well as in the laying flock, an operator would have to start 177 chicks to house 108 pullets to get an average of 100 hens in the laying flock. For this reason, he noted, the pullet cost per hen in the laying flock is $2.03 instead of $1.88. A 5% reduction in death loss will reduce costs ½¢ doz., he said.

The figure shown for feed cost per pullet housed was 73¢.

Breaking egg production costs down into major categories, Dr. Berg said the average net operating cost in Minnesota is $4.65 per hen or 25.4¢ per dozen eggs; ownership cost, 63¢ per hen or 3.4¢ per dozen eggs, and labor cost, $1 per hen or 5.5¢ per dozen eggs.

Included in the operating cost analysis was feed cost of $2.73 per hen or 15.2¢ per dozen eggs—based on 6.1 lb. feed per dozen eggs at 2.5¢ lb.

"Feed is the largest single expense in egg production, amounting to almost half the total cost," Dr. Berg noted. "If your feed cost per dozen is high, look for the following: (1) High price of feed, (2) low egg production, (3) wastage of feed and (4) low feed conversion."

He said improving feeding efficiency to 5 lb. feed per dozen will reduce feed cost by 2.5¢ per dozen eggs produced.

Dr. Berg suggested that fixed ownership costs may be reduced in the following ways:

1. Use of low-cost adequate buildings and equipment.
2. Use of adequate existing buildings.
3. Capacity utilization of buildings and equipment.
4. Reduction of ownership costs.
5. Increased rate of lay.

Regarding labor costs, Dr. Berg said it will pay a producer to mechanize only if the benefits received in reduction of labor more than pay for the cost of ownership. In some cases, he said, mechanical equipment can be justified because of a person's physical condition or a shortage of labor.

Pointing to the total net operating cost of about 25¢ per dozen eggs, Dr. Berg commented, "Your decision on whether to continue the laying operation for another year should be based on this figure. Since ownership costs are fixed, any return above 25¢ can be applied toward labor and ownership costs.

"During the laying year, pullet costs are also fixed," he continued. "Therefore, the decision of whether to continue to produce eggs for the rest of the year should be based on the out-of-pocket cost. As long as the price is enough above this figure to make the effort worthwhile, it will pay to continue, since the difference between the cost and the price will partially recover the fixed costs of the pullet, ownership and labor."

Dr. Berg said the total average production cost of 34¢ per dozen eggs, which includes a reasonable charge for labor, should be considered when comparing the income opportunities from a laying enterprise to other enterprises on a long-time basis.

"Careful management," he said, "can reduce costs of egg production as much as 8¢ doz."

Size of Flock?

What about the optimum size of flock? Dr. Berg noted that one study indicates costs per dozen eggs declined sharply up to about 800 hens, when all costs were considered. "Beyond this size, cost advantages per dozen eggs produced were smaller," he observed. "Cost reduction in larger flocks is basically the result of efficient labor costs."

For a family-operated farm, according to Dr. Berg, the optimum flock size should be based on the labor available. If family labor and buildings are available and not used

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in some other productive way, a well-managed flock below 800 hens can be justified.

In considering expansion beyond a producer's present buildings and labor supply, it is important to see how labor and capital compete with other enterprises. In this respect, Dr. Berg advised that the following questions be considered:

1. What is the added investment needed?
2. What repayment schedule is required?
3. What are the added total expected costs?
4. How much added labor is required? Is labor available in the family?
5. What returns can be expected?
6. Are other enterprises more profitable?
7. What is the effect on family living?

Premium Prices

"Most quality egg programs in Minnesota now are yielding premium prices to producers," Dr. Elton Johnson, head of the University of Minnesota poultry department said. "This is likely to continue for a long time to come." He urged producers to set as their goal "nothing less than all grade A."

Producers in Minnesota can hold their own if they keep costs down and quality up. Minnesota now ranks third in egg production nationally. Total output has remained constant, despite fewer birds, because of increased production per layer. In Minnesota this averaged 212, "which looks pretty good until you note that on the Pacific Coast the average was 219 last year. The number of farms in Minnesota with laying flocks dropped from 106,000 in 1953 to 71,000 this year," he said.

Minnesota diversified farms have an advantage over specialized producers elsewhere, Dr. Johnson said, because they can expand or contract flock size to ride out temporary price slumps and are not wholly dependent on eggs for income.

The Minnesota hatchery group passed resolutions urging that school lunch programs serve fresh eggs rather than dried eggs. "Serving our children an inferior egg product can create a dislike for eggs for many years to come," it stated.

In another resolution it called for a federal investigation of the present system of basing egg prices on New York quotations. It asks the government to develop a system that "more truly reflects actual supply and demand."

J. G. Longstreth

Roy A. Parker

U.S.I. Makes Two Sales Appointments

NEW YORK—The appointments of Joseph G. Longstreth as manager of the St. Louis sales office and Roy A. Parker as manager of the Kansas City sales division were announced recently by U. S. Industrial Chemicals Co., division of National Distillers & Chemical Corp.

Mr. Longstreth has been a sales representative in the St. Louis area since he joined U.S.I. in 1955. He received a B.A. degree in chemistry and zoology at Washington University.

Mr. Parker has been associated with the company for the past 33 years and, prior to his new assignment, was manager of the firm's Kansas City sales office.

Firm Announces New Packaged Premix Line

KANSAS CITY—The formula feed division of Thompson-Hayward Chemical Co. has announced the introduction of "T-H Mix," a new line of packaged premixes.

Manufacturing a complete line of premixes for poultry, turkey, swine, cattle, sheep, dogs and mink, the company's new line covers every growing stage from pre-starter to finisher.

The firm also has set up a suggested feed program to be used with its new premixes. The program outlines several different combinations of ingredients which feed formulators may use when mixing feed to include T-H Mix. Purpose of the feed program, according to the announcement, "is to allow customized feed formulation without costly over-fortification or duplication of additives."

Thompson-Hayward has supplied industrial and agricultural chemicals to 200 midwestern states since 1917.

Convention Site

DES MOINES, IOWA—The board of directors of the National Feed Ingredients Assn. has selected the site for the 1960 annual convention.

The meeting will be held Sept. 21-23 at Liggetts Holiday Inn at Burlington, Wis. Burlington is 80 miles northwest of Chicago, 35 miles southwest of Milwaukee and 80 miles southeast of Madison.

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YOU CAN AXLE MORE PAYLOAD — DRIVERS LIKE SIMPLE OPERATION

- Capacities from 5 tons and up in single or tandem axle models.
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- Individual hydraulic drive on each auger makes clearing any jammed auger easier.
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- Special compartment door design reduces bridging.
- Two or more compartments — Tarp or steel top optional.
- Catwalks and ladder standard equipment.
- Pit unloading with bottom auger only.

WRITE, WIRE OR PHONE COLLECT for further information about the Simonsen V-50 series of bulk feed bodies, PLUS a full line of other bulk feed bodies, combination bulk and sack bodies, unloaders to fit your present truck box, bulk fertilizer spreaders, and the NEW Simonsen Feedilizer, a bulk feed and bulk fertilizer body.

SIMONSEN MANUFACTURING CO.
DEPT. FS QUIMBY, IOWA PHONE 72

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

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BE PREPARED TO TAKE ADVANTAGE OF FAVORABLE MARKET CONDITIONS

INCLUDE THE TERM "DEFLUORINATED PHOSPHATE" ON YOUR REGISTRATION FORMS, BAGS AND TAGS, AND YOU CAN INTERCHANGEABLY FORMULATE WITH EITHER DEFLUORINATED OR DICALCIUM PHOSPHATE.

The AAFCO definition states: "Defluorinated phosphate includes either calcined, fused, or precipitated calcium phosphate. It shall contain not more than one part of fluorine (F) to 100 parts of phosphorus (P). The minimum percentage of calcium (Ca) and phosphorus (P) and the maximum percentage of fluorine (F) shall be stated on the label. The term "Defluorinated" shall not be used as a part of the name of any product containing more than one part of fluorine (F) to 100 parts of phosphorus (P)." (Adopted 1952)

When you register your feeds to contain defluorinated phosphate, this definition provides for the use of *either* defluorinated or dicalcium phosphate. By inadequate registration, you restrict your phosphorus source.

Formulate with either defluorinated or dicalcium phosphate by registering your feeds *now* to include the term "defluorinated phosphate."

Use a defluorinated phosphate tried and tested by State Agricultural Experiment Stations and unaffiliated laboratories . . . CORONET DEFLUORINATED PHOSPHATE (CDP). CDP is ALL biologically useable . . . handles easily in bags or bulk.

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CDP	18.0% min.	31.0% min. 34.0% max.	0.18% max.

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CDP

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All Want Ads cash with order.

HELP WANTED

NATIONAL FEED INGREDIENT PROCESSOR desires reputable salesman, nutritional background. Call on feed mills, New York, New Jersey, Delaware, Maryland. Excellent opportunity to establish satisfying career. Write complete details, qualifications to Ad No. 5397, Feedstuffs, 551 Fifth Ave., New York, N. Y.

EXPERIENCED, AMBITIOUS, MANUFACTURER'S representative by established, expanding company. Exclusive and unusual products in animal health field. Men presently calling on dealers and distributors. Territories open in Georgia, Alabama, Louisiana, Mississippi and Texas. Write complete resume and qualifications to P. O. Box 2006, Savannah, Ga.

MAJOR MANUFACTURER OF BULK FEED delivery units needs aggressive, personable salesman to sell in central Midwest territory. Locate around mid-Illinois. Salary plus commission. Car and travel expenses furnished. Paid vacation, insurance program, and other fringe benefits. Feed industry, truck or comparable sales experience desirable. Address Ad No. 5441, Feedstuffs, Minneapolis 40, Minn.

LARGE NATIONAL GRAIN COMPANY needs man with experience in grain elevator or milling operations to assist in cost reduction studies. Knowledge and experience in time and motion study procedures essential. Please furnish complete data in first letter—personal information, education, experience, references and salary expected. Address Ad No. 5478, Feedstuffs, Minneapolis 40, Minn.

PROFESSIONAL SALESMAN — FOR NEW territories in central U.S. and Southwest. Equipment involved is in $20,000 price range and prospects include feed dealers, grain elevators and related agricultural businesses. New areas are being opened on basis of potential and sales training as well as selling tools are keyed to that potential. We provide attractive draw, etc. Applicants should be between 30 and 50, have good education. Feed sales or similar experience helpful. Send detailed resume with letter. All replies confidential. Address Ad No. 5470, Feedstuffs, Minneapolis 40, Minn.

MILLING EQUIPMENT SALESMAN

Experienced sales engineer by large Southwest equipment manufacturer specializing in feed mill, cereal and processing equipment on national basis. Ready to introduce several new patented items. Car furnished, good salary and commissions. Plenty of leads, excellent territory. Best opportunity for right man. Our employees know of this ad. Give all details for personal interview. Address Ad No. 5479, Feedstuffs, Minneapolis 40, Minn.

SALESMAN

Feed salesman with proven selling ability and enthusiasm by established feed manufacturer in Northeast. Minimum ten years' experience selling poultry and dairy feeds required. Dealer and farm contacts preferred. Excellent pay and benefits. Write in confidence to Ad No. 5448, Feedstuffs, Minneapolis 40, Minnesota. All members of our organization are aware of this advertisement.

BULK EQUIPMENT MANUFACTURER

Manufacturer of new bulk bodies for feed, fertilizer and allied industries offers unusual sales opportunity in protected franchised territories for aggressive, experienced sales representative. Qualifications are: Knowledge of feed and fertilizer industries. Mechanical aptitude helpful. Travel required. Age to 45. Preference to applicants with two or more years' college. Include with your letter, year and make of car, experience and references. Position to be filled on or before Feb. 1. Address Ad No. 5471, Feedstuffs, Minneapolis 40, Minn.

SITUATIONS WANTED

MANAGER OR ASSISTANT—SMALL TO medium sized mill, private or co-op. Address Ad No. 5476, Feedstuffs, Minneapolis 40, Minn.

FEED MILL SUPERINTENDENT — AGE 40, 22 years' experience in M & R & production of formula feed plant. Engineering background. Address Ad No. 5469, Feedstuffs, Minneapolis 40, Minn.

EXPERIENCED PURCHASING MANAGER desires new connection with good firm. Experienced in handling all purchases for large feed and flour mill plus inventory control. Traffic knowledge. Previous experience in farm operation; feed sales; export. College graduate. Address Ad No. 5460, Feedstuffs, Minneapolis 40, Minn.

MR. MANUFACTURER—NEED A PARTner or thinking of retiring? Aggressive, hard-working, young (32) man desires to invest in and join your company, with option to increase holdings at later date. Presently sales manager of farm equipment company, active in management and advertising departments. Salary above $10,000, married—family—college graduate. Address Ad No. 5464, Feedstuffs, Minneapolis 40, Minn.

MACHINERY FOR SALE

12½-TON TOLEDO DIAL SUSPENSION hopper scale, like new, 32 inch dial, Model 2500. O. W. Meyer, Napoleon, Ohio.

WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P. O. Box 574, Jefferson City, Mo.

CHAMPION MOBILE GRINDER AND mixer units. Champion Portable Mill Co., 2105 Como Ave. S.E., Minneapolis 14, Minn.

FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout, 5 H.P. motor drive. Address Ad No. 5479, Feedstuffs, Minneapolis 40, Minn.

J. B. MOBILE FEED UNIT—GOOD CONdition. More milling equipment for dollar invested than if new. R. Jones, 404 E. Vandalia Road, Jacksonville, Ill.

DAFFIN FEEDMOBILE, GMC TRUCK, diesel engine and mill all reconditioned at authorized Daffin service depot. Now prime coated ready for painting to specification. Price, $7,950. Address Ad No. 5474, Feedstuffs, Minneapolis 40, Minn.

PELLET MILL — SPROUT-WALDRON, Simplex, complete with 50 H.P. TEFC motor and starter, four dies, perfect shape, attractive price. California Master 30 H.P. mill. Woods Mill Service, Inc., Box 3, Fort Dodge, Iowa.

FOR SALE—ENCLOSED MOTORS; Richardson Scale; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

SALE—UNUSED STURTEVANT NO. 9 ROtary blender; 150 cu. ft. Sprout-Waldron; 335 cu. ft. horizontal ribbon mixer, unused; Type 304 stainless steel dry material handling installation, including: 1,800 cu. ft. weigh hoppers, bucket elevators, shaker and screw conveyors, etc. Perry, 1403 N. 6th St., Philadelphia 22, Pa.

For Sale

1—F Millers Special Hammer Mill, 30"x8" feed opening. Used, good condition.

NATIONAL SAWDUST CO., INC.
69 N. 6th St., Brooklyn 11, N. Y.

MACHINERY FOR SALE

100 H.P. ACE SPROUT-WALDRON PELlet mill, complete with motor, coolers, Pneu-Vac air system; 60 H.P. Sprout-Waldron pellet mill and cooler; 50 H.P. heavy duty California pellet mill; 5-ton S. Howes Eureka horizontal mixer, with silent chain drive and 40 H.P. motor. Call or write J. E. Hagan Mill Machinery, P. O. Box 574, Jefferson City, Mo.; Phone 6-2197.

MOBILE MILL REDUCED SINCE LAST ad. Must sell. Has 471 GMC diesel (120 H.P.); 20" Industrial hammermill with magnet, 125 bushel mixer; extra large space for carrying sacked and bulk feed. Mounted on 1956 S-160 2-speed "cab-forward" International with new motor. Unit in excellent condition throughout. Reduced to $7,950. Call Advance Farm Service, Madison, S. D.; Phone Clinton 6-4266.

MELOS MILL MOUNTED ON 1947 CHEV. truck, with mixer and molasses equipment; Champion mill and mixer unit with molasses equipment mounted on 1954 Ford truck; 16" Jacobson Ajax hammermill with motors; Myers-Sherman 16" Fords stationary mill with motors; Mooers stationary 24" Industrial hammermill powered by 405 Minneapolis Moline Industrial engine. Mooers Mfg. Co., Windom, Minn.; Phone: Temple 1-3223.

BUSINESS OPPORTUNITIES

FOR SALE—TO SETTLE ESTATE, FEED plant and produce business in the heart of the Red River Valley. Incubators and other equipment can be purchased separately. Call or write George E. Sorlie, Hillsboro, N. D.

FOR RENT—WELL ESTABLISHED FEED mill. Complete set of machinery in good working condition. Railway siding. Partnership available to qualifying party. Known as Franks Mill, Woodstock, Ill. Contact Franks, Marengo, Ill.; Phone: Jordan 8-8581.

WANTED—FEED COMPANY INTERESTed in $20 million potential feed mill, Vineland, N. J., area willing to merge. Equipped for bulk receiving and deliveries, railroad siding. Output 8 hour day for 750,000 Leghorns. Address Ad No. 5473, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—BUSINESS SITE IN NORTHwestern Ohio, located on Pennsylvania railroad. Approximately three acres land in town of 6,000 population. Modern office building and 32'x150' warehouse. Located on good blacktop street with all city conveniences. For information write McGahan Feed Co., Paintsville, Ky.

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Bulk Body Equipment

Reputable manufacturer of newly designed custom and bulk body equipment will announce complete line to feed and fertilizer industries through an aggressive national advertising program Feb. 1. Protected distributor franchises NOW available in certain areas. Write today for complete details to Ad No. 5472, Feedstuffs, Minneapolis 40, Minn.

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FOR SALE

Feed & Grain Handling & Processing Equipment

NEW & USED

Scales, Hammermills, Feed Mixers, Sewing Machines, Elevators
Pellet Mills, and Grain Cleaners

E. H. Beer & Co., Inc. Ibsen Ave. & Newkirk St. Balto. 24, Md.

MACHINERY WANTED

ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 24, Md.

WANTED—100 H.P. MOTOR, 440 VOLT 3/60 1,200 or 1,750 R.P.M. T.E.F.C. Prairie Dehydrating Co., Roanoke, Ill.

WANTED USED PORTABLE LIVESTOCK scale, Ranger or similar type. Cady Implement & Grain, Deer Grove, Ill.; Phone Tampico 172R3.

ELECTRO-MAGNET, SUSPENDED TYPE, general industrial model, rated 1045 watts, D.C. Address Ad No. 5467, Feedstuffs, 551 Fifth Ave., New York 17, N. Y.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

WANT ALFALFA DEHYDRATING EQUIPment. Bucket elevator approximately 700 bu. per hour. Give details. Address Ad No. 5419, Feedstuffs, Minneapolis 40, Minn.

Omaha Construction Firm Names Engineer

OMAHA, NEB. — Appointment of John E. Poehling as an engineer for Mid-States Construction Co. has been announced.

J. E. Poehling

The announcement was made by Wayne Skinner, president of the company.

Mr. Poehling was graduated from the University of Omaha.

He spent two years with Leo A. Daly Co. of Omaha Architects and Engineers. Mr. Poehling has been in charge of the engineering department of the Omaha Bank of Cooperatives for the last three years.

Trustee for Grain Elevator Files Suit

MOBILE, ALA. — The federally-appointed trustee for the Alabama Grain Elevator Co., which went into bankruptcy in 1955, has filed a $100,000 suit against Maryland Casualty Co., Baltimore.

Allan R. Cameron filed the action in U.S. district court, stating the insurance company had insured the grain firm against losses due to fraudulent or dishonest acts by employees.

The suit claims that between Aug. 20, 1954, and March 3, 1955, the firm lost more than $1 million because of the acts of E. S. Morgan, grain elevator manager, and his assistant, John J. Wilson, Sr.

Mr. Morgan and Mr. Wilson were indicted at Memphis, Tenn., last year, along with the former elevator owner, Landon V. Butler, Memphis, on federal charges of mail frauds. Butler was fined $8,000 and Morgan and Wilson were placed on two years' probation.

W. Germany Approves Huge Molasses Imports

WASHINGTON—West Germany has granted import licenses for about 28 million gallons of beet molasses—and this news more than likely will bring about an upward movement in the price of the commodity in this country. The Foreign Agricultural Service says the customs clearance deadline is Dec. 31. The 28 million gallon figure is almost four times greater than West Germany's beet molasses imports last year and more than six times larger than 1957 imports.

NEW GRAIN ELEVATOR

GOLDENDALE, WASH.—Klickitat Valley Grain Growers' members have approved construction of a new grain elevator at Centerville. The new elevator, to have a capacity of 300,000 bu., will replace the old Centerville elevator. Estimated cost of the new elevator is $198,000.

FEEDSTUFFS—*LEADER in its field*

More advertisers use FEEDSTUFFS than any other publication in the feed industry

Pacific Molasses Co. Elects Vice President

SAN FRANCISCO—Philip N. Deckard has been elected a vice president of Pacific Molasses Co., according to James F. Ferguson, president.

P. N. Deckard

Since joining Pacific in 1956, Mr. Deckard has been operations manager of the company's 14 feed molasses distribution terminals spread throughout the U.S., as well as its truck fleet serving the livestock and poultry feeding industry. Mr. Deckard will be responsible for the management, supervision and expansion of these facilities.

He will continue to be headquartered in the firm's main offices in San Francisco.

3 New Miles Enzyme Distributors Named

ELKHART, IND.—The second step in an over-all plan to expedite Miles Chemical Co.'s entry into the farm feed industry through the sale of enzymes is nearing completion, officials have announced. The company is one of four main divisions of Miles Laboratories, Inc., Elkhart, Ind.

This step encompasses the building of a country-wide network of distributors to handle the company's feed additive enzymes.

Three new distributor appointments include W. P. Mann Sales Co., Inc., Omaha, Neb., serving Nebraska and Iowa; M. A. McClelland Co., Kansas City, Mo., covering Oklahoma, Kansas and Missouri, and the Calvin Baird Co., Chattanooga, Tenn., distributor for Arkansas, Louisiana, Mississippi, Tennessee, Alabama, Georgia, Florida and North and South Carolina.

According to Martin P. Guina, manager, special product sales, Takamine Products, purpose of the distributor network is to "further establish our name in the farm feed industry. While each distributor already has wide experience in the farm feed industry, we plan an extensive field and sales training program on the use of our enzymes in animal and poultry feeds."

Fund Drive Started By New Jersey Group For Poultry Legislation

BOUND BROOK, N.J.—The National Poultry Legislative Fund, whose creation was supported about six months ago by the New Jersey State Poultry Assn., announced in The Family Farmer, published here, that it has launched a drive to raise money "for the support of poultry producer organizations or agencies actively working for the advancement of national legislation which will be beneficial to the interests of family type poultry farms."

The new agency—National Poultry Legislative Fund—is governed by a board of directors composed of egg producers representing cooperative associations which have made substantial contributions to the fund, officials said.

According to the announcement in the newspaper "dedicated to the prosperity of the family farm," the new agency has decided to spend its money to meet the expense of maintaining a legislative representative in Washington "to obtain favorable legislation in order to set up a framework of production controls, suitable to the members of the poultry industry, that will bring production in better balance with market needs."

The appeal for funds is directed at feed dealers, hatcherymen, equipment dealers and other related businesses.

The National Poultry Legislative Fund Committee is composed of these New Jersey men: Irvin Brown, Bound Brook, chairman; Eli Clemenson, Dorothy; Sam Tave, Freehold; Eugene Friedman, Toms River, and Nathan Savetsky, Lakewood.

The committee has set a campaign goal of $50,000 and claims to have already raised close to $10,000.

Western Condensing Appoints District Head

APPLETON, WIS. — James C. Clark has been appointed north central district manager, according to W. S. Welch, sales manager for specialty products, Western Condensing Co., division of Foremost Dairies. Mr. Clark will assume responsibility for the complete line of Peebles' milk products, including Super Calf-Kit, Pigrow and the Red Whey Block, with sales coverage in Minnesota, South Dakota and Wisconsin.

J. C. Clark

Prior to joining Western Condensing, Mr. Clark was with American Excelsior Corp. in a sales capacity since 1950. He is a graduate of the University of Iowa.

ALBERS RETIREMENT

OAKLAND, CAL. — Fred Merkleback, 70, will retire at the end of this year as traffic manager for the Albers Milling Co., Oakland. He has been with the firm for 42 years and in his present position for about 25 years. Succeeding him on Jan. 1 will be his active assistant for the past four years, John Brenner.

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EXPELLER
SOYBEAN OIL MEAL AND PEASIZE CAKE
43% PROTEIN — 4% FAT
The High - Fat, High - Protein, High - Energy Basic Ingredient for All Feeds and
DOG FOOD RATIONS
PREFERRED by Feed Manufacturers from Coast to Coast
AVAILABLE in carloads and trucklots throughout the year from our centrally located plant
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IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

HIGHER QUALITY HEAT TREATED HAMMERS
Hammers direct from manufacturer of years' experience. Send your specifications or worn hammer. Quantity discounts on hammers and screens. Ask for prices.
SOUTHWEST MILL SUPPLY CO.
P. O. Box 7455 N. Kansas City, Mo.

BEST MOLASSES CARRIER
PAXCO DEHYDRATED CORN COB MEAL is the best, most economical roughage carrier for molasses in cattle feed, whether for beef or dairy cattle. Write today to:
PAXTON PROCESSING CO., INC.
P. O. Box 120 Phone 222 Paxton, Illinois

The Weigh-Burro bulk scale is self-discharging, rugged, durable. Easy rolling wheels. Scale cap. 1000 lbs. Price only $295. Order by collect wire today.
BURROWS
Burrows Equipment Company Sherman Ave., Evanston, Ill.
Only $295

Helm NEW IMPROVED PELLET MILL
Produces Perfect Pellets with Any Molasses Content UP TO 30%
NO SPECIAL ADAPTER NECESSARY . . .
• U.S. "PowerGrip" Timing Belt does away with gear box and eliminates all slipping . . . all power is used for pelleting.
• Equal Pelleting from BOTH ROLLS . . . Variable speed knife enables you to cut pellets to different lengths with IMPROVED LENGTH CONTROL.
• STATIONARY DIES prevent slinging off of Pellets before you obtain length desired . . .
• MACHINE ESPECIALLY ADAPTED for ROUGHAGE.
• HORIZONTAL DIES and VERTICAL ROLLS with the Helm method of feed induction give equal performance INCREASING YOUR PELLET PRODUCTION!
HELM MANUFACTURING CO.
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UNLOAD BULK CARS *FAST*...and *SAFE*

ONLY ELBA-WINCHDOZER HAS PUSH BUTTON CONTROL FOR MAXIMUM EFFICIENCY AND SAFETY IN UNLOADING BULK CARS

Elba-Winchdozer provides the most simplified system yet devised for bulk materials handling in box cars. With Elba's exclusive push button control, **at the scoop**, the operator has complete control of the winch and scoop. Built in electromagnetic clutch responds to commands instantly, makes unloading a one man operation that can cut your handling costs in half. Write for full information on this modern bulk handling system. Three models available, all reasonably priced.

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ELBA CORPORATION OF AMERICA, 94-39 44th AVENUE, ELMHURST 73, L. I., NEW YORK

Send this coupon ***now*** *for complete specifications*

Elba Corporation of America, Dept. FS-1219
94-39 44th Ave., Elmhurst 73, L. I., New York
Please send me full information on your Elba-Winchdozer system for bulk car unloading. I am particularly interested in the: DALLI ☐ BULLY ☐ MOBY ☐

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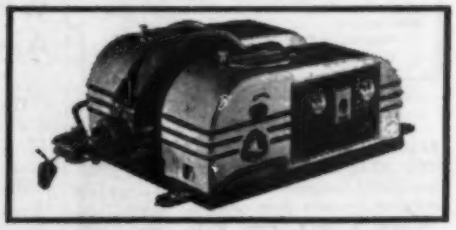
Choice territories available for qualified dealers.

DALLI – Popular standard model. Output – 30 tons of soft feed per hour. Generates a pull up to 1400 pounds. Powered by a 2.5 HP electric motor (220-440 volts) or 5 HP gasoline engine. It weighs 480 lbs.



BULLY – Extra power for heavier jobs and increased efficiency. Output – 40 tons of soft feed per hour. Generates a pull of 2400 pounds. Powered by a 3.5 HP electric motor (220-440 volts) or 8 HP gasoline engine. It weighs 870 lbs.

MOBY – A duplex unit, basically the same as the BULLY model. Output – 80 tons of soft feed per hour. Operates two scoops, each independently controlled by push-button switch. It weighs 946 lbs.

SOYBEANS

(Continued from page 4)

officials. Others still believe that exports will run close to 150 million.

But, notwithstanding such underlying influences, there can be no doubt that the bull market confidence has been badly shaken, and that it is now up to the soybean producers to make the market as exports hold and crush demand continues. There have been steady reports of closing of crushing plants, but this might be ordinary holiday seasonal practice and may not necessarily reflect disastrous margin levels.

Another Influence

Another underlying influence yet to be felt in the market place is the possibility that USDA will be driven into an oil donation program for the voluntary aid agencies.

The testing ground of renewed bull market interest in beans will come late this spring when ground nuts become available in western Europe, and if good copra deliveries are available in that area. If those supplies are not normal, the bean export business could soar to the 150 million bushel market, it is said.

Remaining stocks of USDA old crop beans are now estimated at approximately 12 million-plus bushels. Officials believe if industry were given an itemized breakdown of location of those stocks, that small supply would be exhausted in short order.

Sales Policy

This week, USDA continued its recent sales policy on beans with a minimum sales price of the national average support price plus 20¢ bu. with transit billing available. However, this formula has not been rigidly followed through December, as Commodity Credit Corp. followed the bean market up. The extension of the previous sale policy is set until March 1.

Another factor yet to be resolved is that of re-seal of old crop loan beans, of which about 13 million are now held at the farm level. Should USDA fail to continue the re-seal program, those beans would enter the market by Aug. 1. But the shrinking market price this week and the onset of the critical political elections of next year may persuade USDA to continue the re-seal program, which would effectively erase the increase in total supply which USDA crop reporting service estimated this week.

STILBESTROL

(Continued from page 1)

would be revoked. This would eliminate the so-called "grandfather" provision under which previous clearances remain in effect while new uses or changes are not permitted if suspected carcinogens are involved.

2. A second amendment would change the Delaney clause so that feed additives regarded as suspected carcinogens are not banned if there are no residues in human food. This would permit use of estrogens in feed if it could be shown by scientific evidence that such use, in cattle feed for example, did not result in any residues of the estrogen in the animal end products.

This latter proposal was not involved in the substance of what this reporter and some others heard at the Flemming press conference Dec. 10. However, it is now said that this also is a part of the secretary's thinking on the subject of feed additives in relation to the Delaney clause.

At any rate, the FDA statements this week, although given orally and not yet in a formal statement in print, can only be seen as having a great relief potential for the feed industry, feeders and chemical firms. Many have been suffering from binding restraints since FDA has felt compelled to freeze clearance of certain additives to use patterns which existed prior to the Delaney amendment.

If only the first change mentioned above were passed, stilbestrol would be ruled out. However, if the second also were passed, use could continue on the same basis as before the Delaney amendment.

As reported previously, Mr. Flemming expressed his disapproval of the "grandfather" provision in connection with the Delaney amendment which appeared to give a built-in advantage to firms with previous clearances. He also indicated that use by some and not by others did not make sense from a "health viewpoint."

In addition, though, he is now said to favor the further modification which would permit use of suspected carcinogens so long as there are no residues in the meat.

In connection with the recent comments on stilbestrol for poultry and also stilbestrol for cattle, it was pointed out that the removal program for stilbestrol-treated chicken did not include birds treated with dienestrol diacetate in the feed.

Also, it may be noted that the proposals which would clear full use again of stilbestrol for ruminants presumably could result in new uses of dienestrol diacetate in poultry feed also if no residues are shown.

While arsenicals have not been considered in the "serious" situation of estrogens in connection with feed use, presumably new proposals could result in clearing up the situation for these additives also, if they do not earlier receive the clearance which some have hoped for through scientific showings on organic arsenicals.

Other Problems

Meanwhile, there still exists the cloud of increased FDA activities in the food industries as perhaps highlighted the recent American Farm Bureau Federation convention in Chicago. George Larrick, FDA commissioner, stated that episodes such as occurred in cranberries could occur again unless producers and the government got together to police the situation.

Mr. Larrick pointed out that as FDA activities expand, they will need a larger field staff to police the use approval that may be given for certain chemical compounds in the production of food or as additives in the production of processed foods.

This statement supplements a recent report of a private management consulting service which praised FDA for its high level of efficiency with an under-manned staff and recommended a large increase in FDA personnel.

At the Chicago meeting, Mr. Larrick is reported to have said in part, "The government shall not permit a new pesticide to be used on food crops unless there is an affirmative showing that facilities are available for policing their use."

Mr. Larrick at this same meeting commented that the treatment of surplus grains by fungicides to preserve them in storage should require that such seed use contemplated must require that they be taken out of a food category, which suggests that Mr. Larrick may be proposing identity-preserved handling of seed wheat, for example, or other seed grain crops.

The recent publicity "blitzes" of the government now appear to mark a beginning of an accelerated campaign in the food field.

Industry primarily appears vulnerable to FDA activities in the field of pesticidal chemicals or additives where misuse can occur after FDA has authorized use of tolerance levels for residues or no residues of those products in a food or end products of feed.

FEED DEALER NAMED

FORTY-FOUR, ARK.—Webb's Feed Store here has been named area dealer for Professional Feeds, O. E. Webb announced. Mr. Webb said the firm will have a complete line of poultry and livestock feeds.

S. E. GROUP

(Continued from page 4)

tor, NEPPCO. A detailed discussion was held on the functions of the Urner-Barry egg quotations service and the aims and accomplishments of the northeastern association.

Committee members agreed that production of commercial eggs in the Southeast would continue to increase and that the only limiting factor was credit trends. All areas reported that movement was good and demand was exceeding present production. The major disturbance to producers was the lack of information to aid them in determining the true value of their product.

Other actions by the committee were to request the Southeastern Poultry & Egg Assn. to execute a program to establish a uniform and coordinated marketing program to develop the local markets and export potentials for southeastern produced eggs.

Industry men present were:

Charles W. Cook, Tar Heel Chicks, Charlotte, N.C.; Claude Smith, Mississippi Federated Cooperative, Jackson, Miss.; John W. Hamby, Central Carolina Farmers Exchange, Durah, N.C.; John P. Wallace, Wallace Hatchery, Inc., St. Petersburg, Fla.; Ralph B. Kelly, Kelly Poultry Farm, Garner, N.C. Tom Johnson, Tom's Fresh Eggs, Shelby, N.C.; W. P. Garth, Garth's Poultry & Egg Service, Pelahatchie, Miss.; Bob Godwin, Bob's Eggs, Brundidge, Ala.; W. A. Thomasson, Poultry Industries, Inc., Athens, Ga.; Felton Hoyle, Piedmont Egg Producers, Greenville, S.C.; Bob Gayvert, University of Georgia, Athens; Blanton Smith, Blanton Smith Egg Co., Inc., Nashville, Tenn.

Sidney S. Miller, Sidney Miller, Inc., Irwinton, Ga.; C. E. Boggs, Georgia Department of Agriculture, Atlanta; Norman Sanders, Farmers Cooperative Exchange, Columbia, S.C.; Merlin Bryant, Brundidge Milling Co., Brundidge, Ala.; H. C. Tilford, Jr., Dixie Grain Co., Shelbyville, Tenn.; Tom Harrold, Harrold's Hatchery, Winterville, Ga.; Mays Montgomery, Tilmont Egg Farm, Athens, Ala.; Paul Davis, Southern Empire Egg Farm, Douglasville, Ga., and Walter G. Henderson and Harold Ford, Southeastern staff members.

Texas Completes Plans For Corn Quarantine

AUSTIN, TEXAS—The Texas Agriculture Department is completing mechanics for a state quarantine on corn from northern and eastern states.

An agriculture department spokesman said all corn shipments, whether rail or truck, will have to carry certificates from the states of origin that they are free of European corn borers.

Department inspectors will make spot checks at Texas warehouses, and shipments lacking certificates will have to be screened so the cobs and husks can be destroyed, or fumigated and ground.

Bob Boyd, deputy commissioner of the Texas department, said instructions are going out to Texas warehouses. Of the western states, only Colorado is affected by the order.

TOP OF THE HOPPER

(Continued from page 2)

is difficult to determine, although the consensus (see story on page 1) appears to be that the turndown in demand can be attributed more to the usual seasonal decline than to adverse effects of the caponette news.

But as one veteran newspaperman commented, just the placement of the words "chicken" and "cancer" in the same headline probably created some reactions unfavorable to poultry.

A number of trade organizations showed alertness in issuing statements to the press stressing that there is no danger in eating chicken.

Very few examples of particularly damaging press coverage of the story have come to our attention. However, here are some examples of the sort of things that happen. One newspaper, in "localizing" the Washington story, quoted a state poultry association official as commenting that "there is nothing to be alarmed about." But then the quotation went on thusly: "Stilbestrol is used to feed some broilers so the poultry get fatter quicker. . . . I don't think anyone following the instructions on feeding stilbestrol would get into any difficulty. . . ."

Either the reporter goofed, the man quoted was poorly informed or some unusual feeding practices are being followed in this particular area.

Another example: In an editorial taking to task a state agricultural official for suggesting that Mr. Flemming could have handled the caponette problem in a quieter manner, another newspaper stated: "Stilbestrol was found to be concentrated in the skin, liver and kidneys of certain kinds of chicken (caponettes) in quantities which could cause cancer." This, of course, is not what Mr. Flemming said. The writer took a shortcut to a conclusion which is not justified by scientific evidence, some of which was specifically referred to in the Flemming statement.

This sort of inaccuracy might be considered a minor mishap in the rush of getting out a newspaper, but the cumulative effect of such mishaps could be harmful.

⌄ ⌄

IN FEEDING PIGS, some people have emphasized, you've got to feed enough protein in order to build protein, or muscle, in the animal. This same type of thinking was brought out recently by Dr. Hjalmar Clausen, Europe's leading swine nutrition authority. Extra high levels of protein can't force a pig to produce more meat than its heredity provides for, he noted, but—no pig can produce meat up to the level limited by its genes without being fed a sufficient quantity of protein.

In this connection, it has been pointed out that a midwestern feed company is now promoting a special feeding program for meat-type pigs, those that have the inherent ability to produce more lean pork. Based on the premise that this type of pig must have fully adequate protein to build the meat, the feeding program calls for somewhat higher protein levels than are contained in the firm's conventional rations for ordinary hogs.

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A COUPLE OF INTERESTING items about movement of cattle appeared in the news recently. Canadian packers have purchased about 10,000 steers in Chicago in the past three months. In all of 1958 they bought only about 1,100 head of U.S. cattle, and movement of Canadian cattle into the U.S. was heavy last year. And down Texas way, a meat packer reports that Texas imports about 700,000 head a year to help feed Texans.

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WE SAVED THE REAL "hopper-topper" for the bottom of the hopper this week: From the entire Feedstuffs staff, have a happy holiday season!

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

A AND D FEEDING OIL

Boston: Demand and supply steady; 300 D, 2,250 A 19½¢ lb.; 300 D, 1,500 A 18¢; 300 D, 750 A 16¢; 300 D, 3,000 A 21¢; 400 D, 3,000 A 21½¢; 75 D, 750 A 15½¢.

Denver: Demand fair; trend steady; supply ample; 2,250 A, 300 D 22¢ lb., f.o.b. Denver.

Minneapolis: Demand fair; supply ample; 10,000 A 32¢ lb.; 300 D, 2,250 A 16¾¢ lb.; 300 D, 1,500 A 15½¢ lb.; 300 D, 750 A 14¢ lb.

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7¼¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago, drums included.

New York: Demand and supply good; trend fair; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 16½@17¢, 2,250 A 17½@20¢, 3,000 A 19@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

ALFALFA MEAL

Denver: Demand good; trend strong; supply ample; dehydrated $52, sacked meal; $50, bulk pellets.

Portland: Demand slow; supply ample; trend unchanged; suncured, 15% $50; dehydrated $67.40.

Philadelphia: Demand and supply fair; 17% $69.

Omaha: Demand slow; trend steady; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $52; sacked meal $57, Omaha basis.

Boston: Demand slow; supply irregular; dehydrated, 17% $70; suncured, 13% $44.

New Orleans: Demand fair; trend unchanged; supply adequate; vitamin A, 17% protein, sacked $66@67; pellets $64@65, bulk.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $64, pellets.

Memphis: Demand fair; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $67.

Ft. Worth: Demand fair; supply sufficient on dehydrated, light offerings on suncured; sacked: dehydrated 17%, 100,000 A $67.80 rail, $66 truck; suncured 13% ¼-in. grind No. 1 $48@50, truck or rail.

Los Angeles: Demand steady; trend firm; supply adequate; dehydrated, 17% protein, 100,000 A $53; dehydrated pellet meal, 17% protein, 100,000 A $55; suncured meal, 15% protein $47@48; suncured crumbles, 15% protein $49@50.

Kansas City: Demand fair; supply ample; trend steady with some weakness reported in other markets; dehydrated alfalfa with 17% protein and 100,000 units vitamin A guaranteed on arrival: reground pellets $55, bulk; pellets $53@54, bulk; meal with 18% protein and 125,000 units vitamin A $59, bulk; meal with 20% protein and 150,000 units A $65, bulk; suncured alfalfa demand is light with supplies ample and trend steady, 13% protein pellets $35@35.50, bulk; No. 1 ¼-in. $38.50 @39, No. 2 ¼-in. $36.50, sacked.

Minneapolis: Demand quiet, sellers trying to get shipping instructions; market unchanged to $1 lower; 17% dehydrated, 100,000 units vitamin A reground pellets $57 @58, oiled reground pellets $59@60; sacks $4 more.

Chicago: Demand fair; trend firm; supply adequate; 17%, dehydrated with 100,000 units vitamin A added $58.50@60; 13% suncured $42.50@44.50.

Seattle: Demand fair; trend steady; supply good; 15% protein suncured $45, sacked, delivered truck loads; 136,000 A unit dehydrated $68, sacked, delivered truck loads.

Buffalo: Demand fair to poor; trend steady; supply adequate; $73.50, sacked, Boston.

St. Louis: Demand slow; trend firm; supply limited; suncured, 13% fine, sacked $46; dehydrated, 17%, 100,000 A pellets, demand slow, trend easier, supply ample $58, bulk.

ANIMAL FAT (STABILIZED)

Boston: Demand poor; trend easier; supply plentiful; tallow 6¼¢ lb.; yellow grease 6¾¢ lb.

New Orleans: Demand fair; trend easy; supply adequate; 6@6½¢ lb., tank cars.

Ft. Worth: Demand good; supply scarce; prime tallow, tank cars 5¾¢ lb.; drums 8¾¢ lb., f.o.b. north Texas packing plants, with returnable drums.

Kansas City: Demand slow; trend steady; supply ample; prime tallow 5¼¢ lb., tank car.

Louisville: Demand slow; trend steady; supply good; bleachable white 5¾¢ lb.; white tallow 6¼¢ lb.; yellow grease 5¾¢ lb., priced in tank cars or tank trucks.

San Francisco: Demand fair; supply ample; bleachable fancy 6½¢ lb.; yellow grease 5¢ lb.

St. Paul: No change from last week, adding believability to thinking that market may have hit bottom; more interest and strength in demand, but supplies still ample; 5¾¢ lb., f.o.b. producer's plant.

Chicago: Demand good; trend steady; supply ample; tank truck or car lots, cwt., bleachable fancy tallow $5.62½, yellow grease $5.50.

Atlanta: Demand good; trend steady; supply very limited; 5¢ lb., f.o.b. Georgia and Alabama producing mills.

BARLEY FEED

New Orleans: Demand slow; trend unchanged; supply ample; $50@51.

Denver: Demand good; trend firm; supply ample; rolled $2.05 cwt.

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

Ogden: Supply average; rolled $47@52; whole barley $42@47.

Philadelphia: Demand slow; supply fair; $42.

Boston: Demand fair; supply adequate; $47.50, sacked.

Los Angeles: Demand slow; trend steady; supply adequate; standard rolled $3 cwt., standard ground $3 cwt., both sacked.

Portland: Demand slow; supply ample; trend unchanged; rolled $53, ground $51.

San Francisco: Demand fair; supply ample; rolled $61, ground $60, both sacked.

Seattle: Demand fair; trend steady; supply good; $48, truck lots, new crop.

Baltimore: Demand good; trend firm; supply light; $46.50, sacked.

Chicago: Demand good; trend firm; supply fair; $36, sacked.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $31.50, less than carlots $40; 200 mesh fine $31, less than carlots $40, sacked.

Denver: Demand fair; trend steady; supply ample; $24.50, f.o.b. Denver.

Chicago: Demand fair; trend steady; supply ample; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots, 80 granular $13.50 net; 200 mesh, fine $13.25 net.

BLOOD FLOUR

Louisville: Demand dull; trend steady; supply good; dried $82.50@87.50, sacked.

BLOOD MEAL

Portland: Demand slow; supply ample; trend unchanged; $112.

New Orleans: Demand dull; trend steady; supply ample; $80@85.

Louisville: Demand dull; trend steady; supply good; dried $82.50@87.50, sacked.

Omaha: Demand good; trend strong; supply short; 80% $95, sacked, Omaha.

Ogden: Supply normal; $92.50 ton in 100-lb. bags, f.o.b. Ogden.

Los Angeles: Demand fair; trend steady; supply adequate; $5.50 a unit of ammonia, sacked.

San Francisco: Demand fair; supply ample; $6 a unit of ammonia.

Chicago: Demand good; trend steady; supply fair; 80% protein $115, sacked.

BONE MEAL (STEAMED)

Louisville: Demand dull; trend strong; supply very light; $96, nominal.

Ft. Worth: Demand good; supply light; $90, sacked, f.o.b. Ft. Worth, local manufacture.

Boston: Demand steady; supply light; $105, sacked.

Portland: Demand slow; supply ample; trend unchanged; $99.

New Orleans: Demand fair; trend steady; supply ample; $80@85.

Cincinnati: Demand good; trend steady; supply fair; $105, sacked, Cincinnati.

Denver: Demand fair; trend steady; supply ample; $109, Denver.

Los Angeles: Demand fair; trend unchanged; supply limited; imported $31, 20-ton lots, sacked.

San Francisco: Demand good; supply ample; $75, sacked.

Seattle: Demand good; trend firm; supply limited; $90, sacked, ex-dock.

Chicago: Demand good; trend steady; supply ample; $100, sacked.

Buffalo: Demand good; trend steady; supply limited; $105, sacked.

BREWERS DRIED GRAINS

Los Angeles: Demand slow; trend unchanged; supply adequate; $50.

Ft. Worth: Demand fair; supply scarce for nearby shipment; 26% protein $55@56, December.

Boston: Demand good; supply fair; 26% $57.

Philadelphia: Demand and supply fair; $58.

New Orleans: Demand fair; trend steady; supply good; $49@50.

Cincinnati: Demand poor; trend steady; supply scarce; $52.

Louisville: Demand fair; trend steady; supply good; $49.

San Francisco: Demand fair; supply ample; $54, sacked.

Chicago: Demand fair; trend steady; supply ample; $46.50.

Buffalo: Demand and supply fair; trend steady; $57, Boston.

St. Louis: Demand good; trend steady; supply light; $45.

BREWERS DRIED YEAST

Los Angeles: Demand slow; trend unchanged; supply adequate; 10¢ lb., 5-ton lots; 11¢ lb., 1-ton lots; 12¢ lb., less than ton lots; all sacked.

Cincinnati: Carlots 11¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., sacked.

Louisville: Demand fair; trend steady; supply good; 10@10½¢ lb., sacked.

Boston: Demand and supply steady; 10¢ lb., sacked.

Portland: Demand good; supply ample; trend unchanged; 8½¢ lb.

Omaha: 10½¢ lb., sacked.

Denver: Demand light; trend steady; supply ample; 8¢ lb., f.o.b. Golden, Colo.

San Francisco: Demand fair; supply good; 10¢ lb.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12¼¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; 10½@12¼¢ lb., ton lots.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., all sacked, f.o.b. New Jersey.

Buffalo: Demand slow; trend steady; supply ample; $9.65 cwt.

BUTTERMILK (CONDENSED)

New Orleans: Demand slow; trend unchanged; supply adequate; $4.25@4.30 cwt.

Los Angeles: Demand slow; trend unchanged; supply adequate; 5½¢ lb., 100-lb. lots in barrels; 4½¢ lb., 500-lb. lots in barrels.

Louisville: Demand dull; trend steady; supply nil; $4.25 cwt., 100-lb. bbls.

Boston: Demand and supply steady; 3.95¢ lb.

Ogden: Supply average; $4.40, 100-lb. drum.

Philadelphia: Demand slow; supply light; $4.25 cwt.

Ogden: Supply average; $4.40, 100-lb. drum.

San Francisco: Demand fair; supply good; $5 cwt.

Chicago: Demand good; trend higher; supply light; $3.50@3.75 cwt., barrels.

CALCITE CRYSTALS AND FLOUR

(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N.J.: Crystals $11.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50, sacked.

Los Angeles: Demand slow; trend unchanged; supply adequate; flour $10.15, 20-ton cars; meal $11.15, 20-ton cars, both sacked.

Minneapolis: Fine grind, 50-lb. bags $12.25, 100-lb. bags $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, sacked.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100-lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

CHARCOAL

Los Angeles: Demand fair; trend unchanged; supply adequate; hardwood poultry $156, less than ton lots; $144.40, ton lots; both sacked.

Boston: Demand and supply steady; $110, sacked.

San Francisco: Demand steady; supply ample; $141.

Chicago: Demand fair; trend firm; supply fair; 50-lb. multiwalls $110.

COCONUT OIL MEAL

Los Angeles: Demand slow; trend unchanged; supply limited, mostly from resellers; copra cake $78@79.

Portland: Demand slow; supply ample; trend unchanged; $78.50.

San Francisco: Demand good; supply tight; solvent $67.50.

Seattle: Demand fair; trend firm; supply limited; $84, delivered truck, sacked.

COD LIVER OIL (FORTIFIED)

Boston: Demand and supply steady; 600 D, 2,250 A 20½¢ lb.; 300 D, 3,000 A 22¢; 300 D, 2,250 A 20¢; 500 D, 1,500 A 19¢; 300 D, 1,500 A 18½¢.

New York: Demand and supply good; trend firm; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 18½@20¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 500 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

CONDENSED FISH SOLUBLES

Denver: Demand poor; trend steady; supply ample; dried $147, Denver.

Boston: Demand and supply good; 4¾¢ lb.

New Orleans: Demand light; trend easy; supply normal; $50@55, f.o.b. Gulf.

Los Angeles: Demand slow; trend weaker; supply adequate; 3¢ lb.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $52.90, meal $66.90.
Atlanta: Feed $58.98, meal $72.98.
Birmingham: Feed $57.64, meal $71.54.
Boston: Feed $57.84, meal $71.84.
Chicago: Feed $46, meal $60.
Cleveland: Feed $54.14, meal $68.14.
Denver: Feed $56.51, meal $70.51.
Ft. Worth: Feed $54.96, meal $68.96.
Indianapolis: Feed $51.36, meal $65.36.
Kansas City: Feed $46, meal $60.
Louisville: Feed $53.21, meal $67.21.
New Orleans: Feed $56.20, meal $70.20.
New York: Feed $58.43, meal $71.43.
Norfolk: Feed $56.71, meal $70.71.
Philadelphia: Feed $57.02, meal $71.02.
Pittsburgh: Feed $54.96, meal $68.96.
St. Louis: Feed $46, meal $60.
Decatur, Ill.: Feed $39.75, meal $56.75.

CORN OIL MEAL

Louisville: Demand dull; trend steady; supply light; $50.46.

Cincinnati: Demand fair; trend steady; supply adequate; $47.

COTTONSEED OIL MEAL

Portland: Demand slow; supply limited; trend unchanged; $76.

Boston: Demand fair; supply adequate; $82.

Ft. Worth: Demand fair; trend of forward positions weaker; supply sufficient; 41% old process $69; solvent 1% fat added $66.50, December-January; pellets $2 additional; cottonseed hulls $14@16.

Louisville: Demand slow; trend steady; supply good; old process $66; new process $64.

Cincinnati: Demand poor; trend steady; supply somewhat limited; $68, Cincinnati.

New Orleans: Demand good; trend steady; supply ample; $72.50@73.50.

Kansas City: Demand slow; trend steady for prompt, $1@2 weaker for January, February, March; supply ample; solvent meal $59.50@60, bulk, Memphis; old process $61@61.50.

Wichita: Demand good; supply insufficient; 41% old process $73, sacked.

Los Angeles: Demand slower; trend weaker; supply ample; $70@72.

Ogden: Supply average; 41% $75@80.

Omaha: Demand slow; trend easy; supply ample; 41% solvent $68.20, delivered Omaha.

Memphis: Demand poor; trend lower; supply fair; prime 41% protein, old process $60.50; new process, 41% solvent $59.

Philadelphia: Demand slow; supply fair; $74.

Denver: Demand fair; trend steady; supply ample; 2% $69.40, Denver.

San Francisco: Demand good; supply tight; 41% $69, 44% $73.

Chicago: Demand good; trend firm; supply fair; Memphis basis: hydraulic $61.50, solvent $59.50.

Seattle: Demand good; trend firm; supply limited; 41% expeller process $80, delivered, truck lots.

Atlanta: Demand good; trend weak; supply good; 41% $65, f.o.b. Georgia; $63, f.o.b. north Alabama producing mills.

Buffalo: Demand poor; trend steady; supply fair to poor; $88, sacked, Boston.

St. Louis: Demand slow; trend lower; supply ample; solvent $62.50.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb., warehouse.

New York: Demand and supply good; trend firm; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Cincinnati: 18% phosphorus $81.02; 13% phosphorus $63.96, f.o.b. Cincinnati.

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12% $53, f.o.b. Tupelo in 100-lb. multiwall bags, $50 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $71.80 (or $3.99 per unit of P), f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Coronet, Fla.: Carload, bagged $66.25 and bulk $63.25; truck load, bagged $67 and bulk $64, f.o.b. Coronet, Fla.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $74.35 net ton, f.o.b. Houston; 100-lb. multiwall bags $71.35, bulk.

D/CALCIUM PHOSPHATE

Cincinnati: 18½% phosphorus $92.15, f.o.b. Cincinnati.

Denver: Demand fair; trend steady; supply ample; $95.80, f.o.b. Denver.

Trenton, Mich.: 18½% P $83, bulk, boxcar/hopper car; $86, bagged, in carloads or truckloads; $96, bagged, in less than carload lots; 21% P, $94.65, bulk, boxcar/hopper car; $97.65, bagged in carloads or truckloads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Carload and truckload, bagged $80.50, bulk $77.50, f.o.b. Texas City, Texas.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $86 (or $4.65 unit of P), freight equalized from nearest producing point.

carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices: for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Portland: Demand slow; supply ample; trend unchanged; $112.

DISTILLERS DRIED GRAINS

Louisville: Demand slow; trend steady; supply good; bourbon grains: light $54, dark $56, solubles $79, all sacked.

Cincinnati: Demand poor; trend steady; supply adequate; $53@54.

Boston: Demand fair; supply tight; dark $60.

Philadelphia: Demand slow; supply light; $67.

San Francisco: Demand fair; supply ample; solubles $85, sacked.

Seattle: Demand good; trend firm; supply limited; $68.50, delivered, truck lots, sacked.

Buffalo: Demand good; trend steady to higher; supply fair to poor; $66, Boston.

DRIED BEET PULP

Denver: Demand excellent; trend very strong; supply slightly shorter; $32, Denver.

New Orleans: Demand fair; trend steady; supply adequate; $51@52, sacked, carlots.

Ft. Worth: Demand slow; supply moderate; 50-lb. papers $51.70, December, delivered Ft. Worth.

Boston: Demand and supply steady; $51, sacked.

Portland: Demand good; supply ample; trend unchanged; $51.60.

Ogden: Supply average; $41@46.

Los Angeles: Demand fair; trend unchanged; supply ample; $47.40@49.40.

San Francisco: Demand good; supply fair; $45.20.

Atlanta: Demand fair; trend steady; supply ample; $53.15, sacked, delivered.

Seattle: Demand good; trend steady; supply limited; $50, delivered, carlots, sacked.

Buffalo: Demand fair to good; supply fair; trend steady to higher; $52, sacked, Boston.

DRIED BUTTERMILK

Los Angeles: Demand slow; trend unchanged; supply adequate; 13¢ lb., sacked.

Louisville: Demand slow; trend steady; supply normal; $240@245.

New Orleans: Demand fair; trend steady; supply ample; $12@13 cwt., sacked.

Boston: Demand good; supply short; 14¢ lb., sacked.

Ogden: Supply average; $17.25 cwt.

Portland: Demand slow; supply ample; trend unchanged; 12¢ lb.

San Francisco: Demand fair; supply ample; 11½¢ lb.

Chicago: Demand good; trend higher; supply light; medium acid $13.50 cwt., nominal; sweet cream $13.50, nominal, both sacked.

Buffalo: Demand good; trend steady; supply limited; $13.75 cwt.

DRIED CITRUS PULP

New Orleans: Demand fair; trend easy; supply normal; $32.50@35, sacked, f.o.b. Florida points.

Boston: Demand slow; supply ample; $32.50, sacked, f.o.b. Florida.

Los Angeles: Demand and trend steady; supply limited; orange pulp $43; lemon pulp $42.

San Francisco: Demand and supply fair; meal $49, sacked.

Atlanta: Demand good; trend steady; supply limited; $32.50, sacked, f.o.b. Florida producing plants.

Buffalo: Demand poor; trend steady to lower; supply adequate; $31, sacked, f.o.b. Florida points.

DRIED SKIM MILK

Los Angeles: Demand slow; trend unchanged; supply adequate; 15¢ lb., less than ton lots; 14⅜¢ lb., ton lots; both sacked.

Ogden: Supply average; $15.15, 100-lb. drum.

Philadelphia: Demand slow; supply light; $67, sacked.

Boston: Demand active; supply scarce; 13¢ lb., nominal.

Louisville: Demand dull; trend steady; supply ample; $255@260.

Cincinnati: Demand fair; trend steady; supply adequate; 13@14¢ lb., sacked.

New Orleans: Demand slow; trend unchanged; supply ample; $13@13.50 cwt., sacked.

San Francisco: Demand and supply fair; 13½¢ lb.

Minneapolis: Supply still scarce; demand good; firm at $13.75 cwt., sacked.

Chicago: Demand good; trend higher; supply fair; $13@13.50 cwt., nominal, sacked.

Buffalo: Demand fair; trend steady; supply limited; spray $13.85 cwt.

DRIED WHEY

Cincinnati: Demand fair; trend steady; supply adequate; $6 cwt., sacked.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6, sacked, delivered Ft. Worth; $6.25 ton lots, f.o.b. warehouse, Ft. Worth.

Los Angeles: Demand slow; trend unchanged; supply adequate; $5.93 cwt., carloads; $6.23 cwt., l.c.l.; both sacked.

Wichita: Demand light; supply ample; $6.50 cwt., sacked.

Denver: Demand fair; trend steady; supply ample; $6.50 cwt.

Philadelphia: Demand slow; supply light; $6.50 cwt., sacked.

New Orleans: Demand good; trend easy; supply ample; $6@6.50 cwt., sacked.

Boston: Demand and supply steady; 5½@6¢ lb., f.o.b. shipping points.

Ogden: Supply average; $6, 100-lb. bag, sacked.

Portland: Demand slow; supply ample; trend unchanged; $5.80 cwt.

Louisville: Demand dull; trend steady; supply normal; $125.

San Francisco: Demand steady; supply good; $5.75 cwt.

Minneapolis: No change from last week; demand good; supply tight; $5.50 cwt.

Seattle: Demand and trend steady; supply good; $6.40 cwt., ex-warehouse, l.c.l.

Chicago: Demand fair; trend firm; supply ample; $5.75@6 cwt., sacked.

FEATHER MEAL (HYDROLYZED)

Ft. Worth: Demand slow for domestic, good for export; supply sufficient; 85-87% protein $70@72.50, sacked, f.o.b. trucks, north Texas plants.

Boston: Demand steady; supply tight; $80, sacked, f.o.b. Maine shipping points.

Los Angeles: Demand slow; trend unchanged; supply adequate; $1 a unit of protein, sacked.

Atlanta: Demand good; trend strong; supply very limited; $77.50, f.o.b. Georgia and Alabama producing mills.

Ft. Worth: Demand fair; supply ample; 85-87% protein $72.50@80, sacked, f.o.b. trucks, north Texas plants.

Salisbury, Md.: Demand good; supply adequate; $86, f.o.b.

FISH MEAL

Los Angeles: Demand slow; trend unchanged; light offerings; local production, 60% protein $1.80 a unit, sacked.

Denver: Demand fair; trend steady; supply ample; $1.85 a unit of protein, f.o.b. West Coast.

Louisville: Demand dull; trend steady; supply light; $140@145, nominal.

Ogden: Supply normal; $1.70 a unit, f.o.b. Coast; 65% $115@117.

Omaha: Demand and trend fair; supply plentiful; 60% menhaden $130, f.o.b. Omaha.

Boston: Demand fair; supply adequate; $130, sacked, f.o.b. Gloucester.

Portland: Demand slow; trend lower; supply ample; $1.60 a unit.

Ft. Worth: Demand fair; supply sufficient; 65% protein $121, sacked, delivered Ft. Worth.

New Orleans: Demand dull; trend easy; supply ample; menhaden, 60% $127.50@130, scrap $124@126; both sacked, f.o.b. Gulf.

Cincinnati: Demand fair; trend steady; supply adequate; $145.

San Francisco: Demand slow; supply ample; $1.70 a unit of protein.

Minneapolis: Little change in situation for Gulf menhaden and 60% blended; 70% herring off $13; demand slow, supply adequate; Gulf menhaden $140@143, sacked; 60% blended $140@145, sacked; 70% herring $152, sacked, f.o.b. Minneapolis.

Seattle: Demand and supply good; trend easy; $1.75 a unit protein, delivered, truck lots, sacked (Canadian production).

Atlanta: Demand fair; trend steady; supply ample; 60% menhaden $115@120, sacked, Atlantic and Gulf ports.

Chicago: Demand very unsettled; trend firm; supply liberal; sacked: menhaden, eastern $117@121 nominal and scrap $113@117 nominal; Gulf, meal $117@121 nominal and scrap $113@117 nominal; Canadian herring meal $1.65 a unit of protein.

Buffalo: Demand just fair; trend steady; supply ample; 60% protein, menhaden $130 bulk, $135 sacked.

HAY

Boston: Demand slow; supply steady; No. 2 timothy $40@42.

Philadelphia: Demand slow; supply light; $24@25.

Portland: Demand slow; supply ample; trend unchanged; $36.

Ogden: Supply average; $25 in the barn.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 timothy $24@25; No. 1 red clover $26@27; alfalfa clover mixed $27.50; alfalfa, first cutting $32, second cutting $25; wheat or oat straw $18@20.

Ft. Worth: Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $38@40, No. 2 $36@38; No. 2 prairie $24@26; No. 2 Johnson grass $22@24, delivered Texas common points.

Louisville: Demand for hay slow, straw good; trend of hay and straw steady; No. 1 hay, any variety of local $30@32, No. 2 $28@30; straw $20.

Los Angeles: Very light offerings; good demand; U.S. No. 1 $38@39; U.S. No. 2 leafy $35@36; U.S. No. 2 green $36@37; U.S. No. 2 $32@34.

Denver: Demand and supply fair; trend good; alfalfa baled $32@33, new hay, third cutting.

Wichita: Demand heavy; supply short for prairie, sufficient for alfalfa; prairie $22, alfalfa $25@27.50, baled.

Seattle: Demand good; trend firm; supply fair; U.S. No. 2 green baled alfalfa $40, delivered, truck lots.

HOMINY FEED

Boston: Demand slow; supply ample; $53.50.

Memphis: Demand poor; trend steady; supply ample; white $42.70; yellow $42.70.

Cincinnati: Demand poor; trend steady; supply limited; $45.

New Orleans: Demand fair; trend easy; supply ample; $45.50@46, sacked.

Louisville: Demand slow; trend steady; supply normal; $48.

Kansas City: Demand fairly good, although as prices worked higher, demand slipped; trend steady; supply fairly tight; yellow $35, bulk; white $34@34.50.

Seattle: Demand fair; trend steady; supply limited; $53, delivered, sacked, carlots.

Buffalo: Demand good; trend steady to higher; supply poor; $53.50, Boston.

St. Louis: Demand slow; trend steady; supply adequate; yellow $42.

Chicago: Demand fair; trend steady; supply ample; $43.

LINSEED OIL MEAL

Philadelphia: Demand and supply fair; 34% $92.

Minneapolis: Bit of confusion in this commodity—looked strong a week ago with supply scarce, but Dec. 17 quote $70.50, December-March, was $3@4 lower than week earlier.

Omaha: Demand slow; trend strong; supply tight; 34% solvent $78.80, bulk; 32% old process $84.30, Omaha basis.

New Orleans: Demand slow; trend easy; supply ample; $94@96, sacked.

Portland: Demand slow; supply ample; trend unchanged; $88.

Louisville: Demand slow; trend steady; supply normal; old process $92.50; new process $87.50.

Kansas City: Demand fair; trend steady to stronger; supply adequate for demand, although there is not much available because of light production; solvent meal $73.50@74, bulk, Minneapolis; old process $78.50.

Boston: Demand slow; supply adequate; $89.50@91.50.

Wichita: Demand fair; supply sufficient; 34% $92.20, sacked.

Cincinnati: Demand poor; trend steady; supply adequate; new process $73; old process $78.50, Minneapolis.

Los Angeles: Demand fair; trend unchanged; supply limited; local production, 31% protein $73, nominal.

Ft. Worth: Demand slow; supply limited; 34% protein; new process $89.50, old process $95, truck.

Denver: Demand poor; trend firm; supply tight; $88.30, Denver.

San Francisco: Demand fair; supply ample; $78.

Seattle: Demand fair; trend steady; supply limited; 31% protein, California $90, delivered, carloads, sacked.

Chicago: Demand good; trend strong; supply moderate; Minneapolis basis: solvent $74, expeller $78.

LIVER AND GLANDULAR MEAL

Omaha: Demand fair; trend strong; supply short; 65% $180, sacked, Omaha.

MALT SPROUTS

New Orleans: Demand fair; trend easy; supply ample; $42@43, sacked.

Boston: Demand and supply limited; trend steady; Canadian $48, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $39, Cincinnati.

Chicago: Demand good; trend higher; supply ample; $32.50.

MEAT AND BONE MEAL

Cincinnati: Demand excellent; supply short; trend strong; 50% meat and bone scraps $71, Cincinnati.

Louisville: Demand and supply good; trend steady; $75@80.

St. Paul: Demand somewhat better than last week; supplies still ample; strong trend; up $2@4 from last week to $70@76, sacked.

New Orleans: Demand slow; trend easy; supply ample; $84.50@86.

Omaha: Demand fair; trend strong; supply ample; $67.50.

Ogden: Supply average; 50% protein $77.50 ton in 100-lb. bags.

Los Angeles: Demand good; trend unchanged; supply moderate; 50% protein $1.65 a unit.

Denver: Demand good; trend firm; supply ample; 50% $72.50, sacked, truck lots; $69.50, bulk lots.

Kansas City: Demand fair; trend steady; supply ample; 50% meat and bone scraps $67.50@70.

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Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

Wichita: Demand good; supply sufficient; 50% $80, sacked, f.o.b. plant; 55%, no quotations, no offerings.

Portland: Demand slow; trend lower; supply ample; $1.42 a unit of protein.

Ft. Worth: Demand good; supply normal; meat and bone, 50% $70, f.o.b. Ft. Worth.

San Francisco: Demand fair; supply ample; $1.55 a unit of protein.

Boston: Demand and supply steady; $1.15 a protein unit; converted 50% $70, sacked.

Seattle: Demand good; trend steady; supply ample; 50% protein $80, ex-warehouse, sacked.

Chicago: Demand and supply fair; trend steady; 50% protein $77.50, sacked.

Buffalo: Demand fair; trend steady; supply ample; 50% meat scraps: $70 bulk, $75 sacked.

St. Louis: Demand good; trend stronger; supply limited; $73.

MILLFEED

Minneapolis: Unsettled feeling in dock strike situation prompted some big mixers to order substantial amounts ahead; also some influence in this direction from cut in flour mill running through holiday season; standard midds. up $5 from week earlier to $43.50, sacked; bran stronger by $2@2.50 at $40.50@41, sacked; red dog up $5 to $45, sacked.

Kansas City: Demand good, especially for bulk feed; trend strong; supply seems to be tight for the remainder of December; bran $37.50@38, shorts $37.50@38, sacked; bran $33.50@34.25, shorts $35@35.75, middlings $36@36.50, bulk.

Wichita: Demand improved; supply sufficient; basis Kansas City: bran $36.25@36.75, shorts $36.25@36.75, sacked.

Ft. Worth: Demand extremely good; supply limited; bran $43.50, burlaps $46.50@47; gray shorts $44.50, burlaps $47@47.50; bulk middlings $44, delivered Texas common points.

Chicago: For the past several months the millfeed market has been up and down like the precession of a teeter-totter. For the week ending Dec. 18 the price advanced $2.50 ton on standard bran, $3.50 on middlings and $3.50@4 ton for red dog. This rally came in the face of generally high temperatures over most of this sales area. There was rather marked activity in the trade the first two days of the current calendar week and offerings were scarce, some interest being seen as far ahead as January. While the dock strike seems to have been all ironed out along the East Coast, there are still some wrinkles in the situation along the Gulf, which in turn tends to have some impact on millfeeds through the uncertainty created concerning the ability of mills to ship flour against foreign commitments. Quotations: standard bran $39.50, standard midds. $41.50 and red dog $43@43.50.

St. Louis: Bran $38.50, middlings $40.

Omaha: Demand good; trend strong; supply tight; sacked bran $37; sacked gray shorts $37; bulk standard midds. $37, all Omaha basis.

Cincinnati: Demand fair; trend higher; supply adequate; bran and middlings $45.50.

Memphis: Demand fair; trend steady; supply ample; wheat bran $40.20, gray shorts $42.20, standard midds. $42.20.

Boston: Demand improved; supply spotty; bran $49.50, middlings $50.50.

Buffalo: Millfeeds staged a technical advance last week with the rise based on western strength. Demand here didn't justify the increase. Mixers continued to "sit on their hands" and the country trade is running off their inventories. Sacked differential on bran and middlings narrowed to $4.50 from $5.50. Sacked differential on red dog held steady at $4.50. Bulk and sacked bran ended $2.50 higher; bulk and sacked middlings rose $3.50 and bulk and sacked red dog advanced $3. Quotations Dec. 16: bulk bran $40.50@41, sacked $45@45.50; bulk middlings $42.50@43, sacked $47@47.50; bulk red dog $43@44, sacked $47.50@48.50.

Philadelphia: Demand spotty; trend unsettled; supply fair; bran $48, standard midds. $49, red dog $49.

New Orleans: Demand good; trend easy; supply ample; bran $48@48.75, shorts $48@48.75, sacked; bran $44@44.75, shorts $46@46.75, middlings $46@46.75, bulk.

Louisville: Demand fair; trend easy; supply good; bran $44.10, shorts $46.10, middlings $46.10, all bulk; mixed feed $48, sacked.

Ogden: Supply average; to Utah and Idaho: red bran and mill run $45, middlings $50; to Denver: red bran and mill run $52, middlings $57; to California: red bran and mill run $52.50, middlings $57.50, f.o.b. San Francisco and Los Angeles.

Denver: Demand fair; trend steady; supply adequate; shorts $39.75, bran $39.75, mill run $39.75.

Seattle: Demand fair; trend easy; supply good; $37, delivered, common transit points, carlots.

Portland: Demand slow; trend lower; supply ample; $37.

San Francisco: Demand good; supply tight; millfeed $43, red bran $52.50.

Los Angeles: Standard mill run $42@43, slow demand, weaker trend, ample supplies; red bran $49@50, slow demand, firm trend, ample supplies.

MINERAL FEED

Wichita: Demand heavy; supply adequate; all-purpose with iodine, 50-lb. blocks $97.50; 100-lb. bags $92.50, f.o.b. plant.

Denver: Demand fair; trend steady; supply ample; $100.

Portland: Demand slow; supply ample; trend unchanged; $42.

Ft. Worth: Demand fair; supply sufficient; all-purpose granules $90, block $97; mineral phosphorus 6% granules $106; block $113; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog-mineral phosphorus 3½% granules $87, phosphorus 2% $77 (all in 50-lb. paper bags).

Ogden: Supply normal; $113 ton in 50-lb. blocks; $103 ton, granular, 50-lb. bags.

San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Seattle: Demand fair; trend steady; supply good; mixer-mineral $48, ex-warehouse; all-purpose mineral $85, ex-warehouse, both sacked.

MOLASSES

Minneapolis: Still no change; demand good; supply adequate; $31, tank truck, delivered.

Cincinnati: Demand fair; trend steady; supply adequate; 10¢ gal., New Orleans.

Kansas City: Demand fair; trend steady; supply ample; 10¢ gal., tank car, New Orleans.

Memphis: Demand poor to improving; trend steady; supply ample; blackstrap 10¢ gal., tank car, f.o.b. New Orleans; $22.60 ton, delivered Memphis, truck.

New Orleans: Demand good; trend steady; supply ample; 10¢ gal., tank cars and trucks; 600-lb. customers' drums $7.16.

Ft. Worth: Demand good; supply sufficient; blackstrap 11¼¢ gal., f.o.b. Houston; delivered Ft. Worth truck $25.94, seller's market price on date of shipment.

Louisville: Demand fair; trend steady; supply ample; 10¼¢ gal., tank car lots, f.o.b. Gulf ports.

Denver: Demand fair; trend steady; supply ample; 10¢ gal., New Orleans; $17.10 ton, New Orleans; $20 ton, West Coast.

Boston: Demand good; supply plentiful; 16½¢ gal., tank cars.

Los Angeles: Demand good; trend steady; supply ample; $20, f.o.b. tank cars; $20.25, f.o.b. tank trucks.

San Francisco: Demand and supply good; $20, f.o.b. cars, Richmond, Cal.

Seattle: Demand fair; trend easy; supply good; $20.25, f.o.b. Seattle, tank truck lots.

St. Louis: Demand slow; trend steady; supply ample; 10¢ gal., tank car, New Orleans.

Atlanta: Demand fair; trend steady; supply good; citrus $15@18, f.o.b. Florida producing mills.

Buffalo: Demand and supply good; trend steady; 16½¢ gal., f.o.b. Albany.

NIACIN

New York: Trend steady; $6 kilo, 10-kilo lots; $6.20 kilo, 5- and 2½-kilo lots; $6.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Memphis: Demand fair; trend steady; supply scarce; 3½% protein, reground oat feed $30.25.

Philadelphia: Pulverized white, demand slow, supply fair $50.50; domestic, demand slow, supply fair $30; Canadian oat feed, demand slow, supply light $30.50.

Portland: Demand slow; supply ample; trend unchanged; rolled $60, cleaned $60, ground $62.

Boston: Demand steady; supply spotty; white pulverized $59.50, reground oat feed $34.50, both sacked.

Louisville: Demand slow; trend easy; supply good; reground oats $25.30, rolled oatmeal $84.30, feeding oatmeal $76.80, pulverized white $50.80, crimped $67.80.

Minneapolis: Demand off a bit—holiday dullness; supply ample; feeding rolled oats down $1 to $83; feeding oatmeal steady at $69; pulverized steady at $47; crimped down $1 at $60.50; reground oat feed steady at $23; all sacked prices, $3 less in bulk.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $20.65; pulverized white oats $51.60; rolled $77.

Los Angeles: Demand slow; trend firm; supply limited; local production, pulverized $66, sacked.

Seattle: Demand good; trend steady; supply fair; $55, delivered, truck lots, 38-lb. or better.

Chicago: Demand fair; trend firm; supply ample; reground oat feed $20.50; No. 1 fine ground feeding oatmeal $77; feeding rolled oats $77@80.50.

OYSTER SHELL

Cincinnati: Demand fair; trend steady; supply adequate; $24.45, sacked.

Portland: Demand slow; supply ample; trend unchanged; western $31, eastern $36, granite grits $25, shell flour $21.

Boston: Demand fair; supply steady; in paper $26.05.

Los Angeles: Demand slow; trend unchanged; supply ample; $14.80, sacked.

Louisville: Demand good; trend steady; supply normal; in 80-lb. $23.45 ton, sacked; in 50-lb. $23.70 ton, sacked; in 25-lb. $25.95 ton, sacked.

New Orleans: Demand and supply good; trend steady; $24@25.50, papers.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Seattle: Demand and trend steady; supply good; eastern $36, delivered, carlots, sacked.

PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply very limited; 45% $63, Alabama producing mills.

PEAT MOSS

Los Angeles: Demand slow; trend unchanged; supply adequate; Canadian 8.6 cu. ft. bales $3.65.

Portland: Demand slow; supply ample; trend unchanged; $3.30 a bale.

Boston: Demand fair; supply steady; $3.15 bale in carlots.

Philadelphia: Demand slow; supply very light; $2.99 a bale, f.o.b. pier, nominal.

San Francisco: Demand and supply fair; $3.65 a bale.

Seattle: Demand and supply good; trend firm; $2.80 a bale, delivered, truck lots.

Chicago: Demand fair; trend steady; supply ample; standard 7½ cu. ft. bales $3.80.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drums $1.38; 25-lb. drums $1.41, f.o.b. Cincinnati.

Chittenango, N.Y.: Demand good; trend firm; supply ample; standard blends, 90% KI 10% stearate or carbonate mixture, 100 lb. drums $1.32 lb.; 200 lb. and up $1.30 lb., all delivered.

POULTRY BY-PRODUCTS

Boston: Demand slow; supply ample; $72, sacked, f.o.b. shipping points.

Ft. Worth: Demand good; supply limited; 55% protein $80@82.50, sacked, f.o.b. north Texas plants.

Los Angeles: Demand good; trend firm; supply tight; $1.45 a unit of protein.

Atlanta: Demand good; trend strong; supply very limited; meal $75, f.o.b. Georgia and Alabama producing mills.

Salisbury, Md.: Demand good; supply adequate; meal $88, f.o.b.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gm. in less than ton lots, in 3.36 to 16 gm./lb. mixtures, 3¢ in ton lots or more; freight prepaid or paid to destination.

New York: Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand slow; supply very limited; rice bran $36@37, nominal, f.o.b. south Texas rice mills; hulls $3.50, sacked, f.o.b. mills.

Los Angeles: Demand slow; trend unchanged; supply very limited; California production, high fat content, bran $55, sacked.

San Francisco: Demand good; supply ample; bran $45, polished $49, both sacked.

Atlanta: Demand fair; trend strong; none available; bran $48, sacked, delivered.

SCREENINGS

Minneapolis: Little change; demand only fair; not enough supplies available to make market; Canadian steady at $25; no change in domestic ranges, lights $12@20, mediums $21@29 heavies $30@40; flax screenings, basis 15%, steady at $48.

Ft. Worth: Demand good; supply limited; ground mixed grain $28.50@30.

Cincinnati: Demand fair; trend steady; supply adequate; grain cleanings $24, delivered.

Buffalo: Demand and supply fair; trend steady to higher; ground, sacked $39.50, New York; unground, bulk $32.50, New York.

Chicago: Demand excellent; trend higher; supply light; ground grain screenings $36; Canadian $28.40.

SOFT PHOSPHATE WITH COLLOIDAL CLAY
(Sacked)

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.36.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.96.
St. Louis: $24.14@24.27.

SORGHUMS

Ft. Worth: Demand fair; moderate offerings; No. 2 yellow milo $2.01@2.02, delivered Texas common points.

Los Angeles: Demand steady; trend unchanged; supply adequate; milo $2.17½ cwt.

Seattle: Demand and supply good; trend steady; milo $46.50, delivered, carlots.

SOYBEAN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $58@59.50, Decatur.

Los Angeles: Demand slow; trend strong; supply ample; $79.40.

Louisville: Demand fair; trend steady; supply good; $64.70.

Ft. Worth: Demand fair; supply adequate; 44% $67.10@70; 50% protein $72.60@75.60, immediate through January, depending on origin; trucks, 44% $69.50, 50% protein $75, prompt.

Boston: Demand good; supply adequate;

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Redfish Solubles

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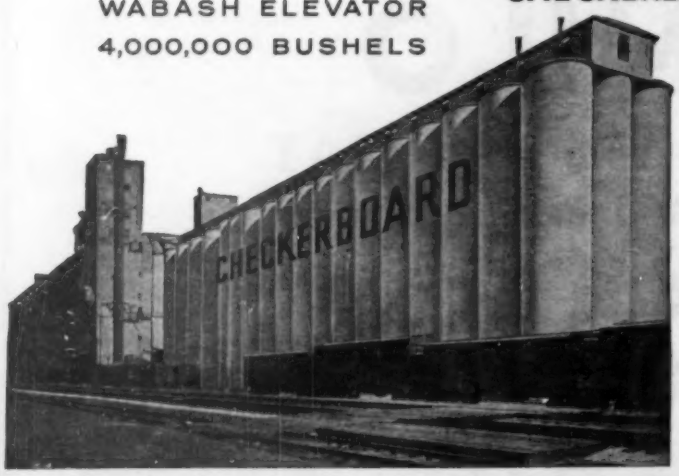

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44% $57.50; 50% $61.50, f.o.b. Decatur.

Minneapolis: Market firming up, with some processors closed down because of narrow conversion margins; demand good; supply ample; price up 50¢@$1 from last week to $51.50@52, Decatur.

Wichita: Demand good for sacked, fair for bulk; supply ample; 44% $69, 50% $77, sacked; 44% $66, 50% $74, bulk, Wichita.

New Orleans: Demand slow; trend steady; supply ample; $66@67.

Denver: Demand fair; trend steady; supply ample; $70, Denver.

Philadelphia: Demand and supply fair; trend unsettled; 44% $56.50, Decatur.

Kansas City: Demand fair; trend firm; supply of sacked meal is tight but bulk is readily available; meal for Kansas City $57@57.50, bulk, Decatur; unrestricted $59.50 @60.

Omaha: Demand good; trend strong; supply tight; 44% $62.60, delivered Omaha.

Memphis: Demand good; trend steady; supply ample; prime 44% solvent $62, f.o.b. Memphis.

Ogden: Supply average; $76@81.

PURINA

(Continued from page 1)

dry, and a 67% increase in Chow sales by our International division.

"Our sanitation-farm supply division moved ahead with another substantial increase in sales over the previous year. . . .

"Our Ralston division reached a new high in sales and profits during the year and seems poised for an upsurge in growth, which makes it one of the fastest-growing divisions of our company.

"Our soybean division continues to expand, so that we are now the second largest processor of vegetable oilseeds in America.

"Our grain merchandising division established a new volume record. . . .

"In Canada, Ralston Purina Co., Ltd., continued its growth and expansion, keeping pace with the increasing population north of the border and their increasing food-feed needs. . . .

"South of the border, our international division has had fine growth in all phases of its operation, and construction is underway on another feed plant at Monterrey, Mexico."

Here are reports on the individual divisions given in the annual report:

Chow Division—"The 5 million ton goal of the Chow division was accomplished this year in spite of generally unfavorable agricultural economic conditions. To put 5 million tons in the proper perspective, just consider that this is nearly four times the maximum feed volume ever sold in one year by any other feed manufacturer.

"With the ink scarcely dry on this year's tonnage report, the Chow division announced the next tonnage goal—6 million tons—set at the close of the fiscal year. During the past year, many steps have been taken to assure prompt accomplishment of this new goal.

"The Chow sales organization is putting greater emphasis on building better-balanced and more diversified tonnage in all areas. Complete market analyses, a new sales technique, are being made around all dealer markets to point up the potential and best growth opportunities.

"During the past year, a new dealer business management archway program was introduced to dealers at meetings across the country. This new archway is geared to changing agricultural conditions and points the way to the stronger dealerships it will take to earn the farmers' business tomorrow. These super-service dealerships are becoming a reality in more and more rural communities.

"Realizing the great future tonnage potential in the heavy grain-producing states of the Midwest, the marketing division has formed two new sales regions and several new divisions in this area to permit greater concentration by salesmen and dealers. This is another 6 million ton move.

Ralston Division—"This has been another banner year for our rapidly growing Ralston division, as we reached a new high in both volume and profits. . . .

Sanitation-Farm Supply Division—"Sanitation products and farm supplies are essentially insurance items which help our customers secure maximum results from their feeding operations.

"Through our sanitation-farm supply research, a complete line of disinfectants, insecticides and vermifuges has been developed. These are not medicines, but are safeguards to health which destroy germs and insect pests. Improved sanitation results in better animal growth and feed conversion.

"Purina equipment, which consists mostly of feeders and waterers, offers our dealers another profitable franchise closely associated with the feed and farm supply business. Also, with the increasing use of bulk feeds and the gradual disappearance of the checkerboard bag, this is another effective way to keep the checkerboard prominent in the feedlot.

"This past year, the sale of sanitation-farm supply products reached a new all-time high in volume. They have rendered an invaluable service to our customers and at the same time has made an important contribution to our company profits.

Grain Merchandising—"Our Checkerboard Grain Co. continues to grow and is a profitable division of our company. It serves Purina buyers at all branch plants by keeping them in close touch with the movement and the value of grains and other commodities. The Chicago office, dealing primarily in futures trading, set new volume and profit records during the year as another important contribution to company profits.

Soybean Division—"In keeping with Purina's growth-minded spirit, this division of our company has moved ahead rapidly during the year in expanding its manufacturing capacity of high-quality soybean meal, a major feedstuff used in Chow production. With the addition of the four new soybean plants purchased during the year, we will process a total of 50 million bushels of soybeans. This will produce 1 million tons of soybean meal a year and more than 20 tank cars of soybean oil per day. We are now the second largest processor of vegetable oilseeds in America.

Research—"Research takes on ever greater importance to our company as farming becomes more specialized. The efficiency of production is the difference between profit and loss to most farmers and ranchers. We must study the effects of nutrition, climate, housing, management, breeding and disease in all parts of the country to provide our customers with the facts they need to keep up with the fast-moving trends.

"To meet these stepped-up needs, new poultry research facilities have been built at Nashua, N.H., and Canton, Ga. Our new dog care center at Gray Summit, Mo., has been enlarged and a modern, commercial rabbitry is now under construction. Ground also has been broken for an ultra-modern dairy unit at Gray Summit, including a milking parlor, a calf barn, maternity-test-cow barn and a loafing barn. This new dairy research center will give us both improved research facilities and demonstration opportunities to reach and sell the big, commercial dairyman.

"Additional laboratory space is another 'must' as we gear our research for greatly expanded Chow and Ralston sales. Already under construction in St. Louis is a new building which will nearly double our company's present laboratory facilities at Checkerboard Square. This additional building will house the company's sanitation and animal pathology research laboratories and will provide increased facilities for the analytical, inorganic and organic laboratories. It also will house our expanding Ralston division's cereal research and product development laboratories.

Manufacturing—"To provide additional capacity for our 6 million ton Chow sales goal, new plants were completed and brought into production during the year at Ottumwa, Iowa, and at Fond du Lac, Wis. A third feed plant was purchased at Athens, Ga., and modernized to meet our high standards of engineering and production. With the completion of our new Ralston plant at Cincinnati, construction is now underway on a similar Ralston plant at Clarkson, Ontario, for producing Ralston Chex cereals for Canada.

"In addition to new construction, modernization projects and improvements have been completed at nearly every one of our 57 Chow, Ralston, soybean and sanitation products manufacturing plants in the U.S. and Canada. This has enabled us to attain the lowest total operating cost in our company's history and to provide our customers with fast, efficient service. One example of our modernization program has been the completion of 13 bulk feed stations, all the way from Maine to California. In a very real sense, our manufacturing capacity is ready to turn out the increased production needed to meet the all-time tonnage goals set by our sales leaders.

International Division—"Our company's international division, providing a much-needed service to expanding agriculture in the Latin American countries, has written a fine record during the year. Tonnage growth has been rapid—up 67% over last year—pointing to a sound and profitable future for our business in the Latin American countries.

"To provide the capacity for the increased sales objectives, another new Chow plant already is under construction at Monterrey, Mexico. This plant should be in operation by the spring of 1960. Added to the five other Chow plants already in production, this will give us the manufacturing capacity and distribution we need to offer top-quality Purina service to our dealers in that part of the world.

"Our international division is not yet consolidated in our published reports, but it has enjoyed phenomenal growth, both in sales and production, from a rather modest beginning in 1956. We now have successful manufacturing operations in Mexico, Venezuela, Colombia and Cuba. And shipments are made throughout the Caribbean and Latin American area. . . ."

Financial Highlights

Ralston Purina Co. and Domestic and Canadian Subsidiaries Consolidated

	Year ended Sept. 30 1959	1958
Net sales	$530,571,672	$493,527,453
Net earnings	17,784,368	17,468,759
Per share	2.74	2.71
Cash dividends declared	7,796,409	6,762,596
Per share	1.20	1.05
Income taxes	19,964,000	19,176,000
Per share	3.08	2.98
Shareholders' equity	142,939,381	132,185,206
Per share	22.03	20.53
Wages and employee benefits	51,860,707	49,199,622
Working capital	75,734,168	83,884,329
Plant and equipment (net)	87,073,911	68,995,247
Capital expenditure	23,630,891	10,290,439
Current ratio	3.46:1	3.57:1
No. of shareholders	7,381	6,400

Earnings Statement

Ralston Purina Co. and Domestic and Canadian Subsidiaries Consolidated

	Year ended Sept. 30 1959	1958
Sales of products and other income:		
Net sales	$530,571,672	$493,527,453
Other income, net	3,582,571	3,563,291
	534,154,243	497,180,744
Costs, expenses and other charges:		
Materials and operating expenses	425,287,420	397,385,578
Administrative, research, distribution and general expenses	62,006,288	55,347,176
Depreciation	5,475,651	4,496,952
Retirement plan expenses	2,424,701	2,410,868
Interest	1,211,815	895,411
Taxes on income, including provision for deferred income taxes of $950,000 in 1959 and $565,000 in 1958	19,964,000	19,176,000
	516,369,875	479,711,985
Earnings for the year	17,784,368	17,468,759
Cash dividends declared ($1.20 per share in 1959; $1.05 per share in 1958)	7,796,409	6,762,596
Earnings in excess of dividends	9,987,959	10,706,163
Earnings invested in the business at beginning of year	96,117,646	85,411,483
Earnings invested in the business at end of year	$106,105,605	$ 96,117,646

Balance Sheet

ASSETS

Ralston Purina Co. and Domestic and Canadian Subsidiaries Consolidated

	Year ended Sept. 30 1959	1958
CURRENT ASSETS:		
Cash	$ 6,471,495	$ 11,681,062
Marketable securities, at cost which approximates market	2,262,460	15,661,279
Accounts receivable, less allowance for doubtful accounts	52,108,091	51,411,766
Advances on purchases of materials	1,982,126	800,401
Inventories (at approximate cost not in excess of market):		
Raw materials and packing supplies	31,833,706	26,604,430
Finished products	9,429,903	9,188,059
Prepaid expenses	1,424,860	1,157,755
Total current assets	106,512,641	116,504,752
INVESTMENTS IN AND ADVANCES TO UNCONSOLIDATED FOREIGN SUBSIDIARIES (at cost)	5,311,083	5,753,494
PLANT AND EQUIPMENT (at cost):		
Land	2,131,565	1,943,809
Buildings and equipment, less accumulated depreciation $44,052,042, 1959; $39,468,764, 1958	84,942,346	67,051,438
Other assets and deferred charges	2,973,511	2,031,591
Trademarks, patents and goodwill	1	1
Total	$201,871,147	$193,285,085

LIABILITIES

	Year ended Sept. 30 1959	1958
CURRENT LIABILITIES:		
Accounts payable	$ 12,414,168	$ 12,495,528
Dividend payable	1,946,552	1,931,431
Accrued expenses	5,017,814	4,147,782
Taxes on income	11,399,939	14,045,682
Total current liabilities	30,778,473	32,620,423
LONG-TERM DEBT:		
3¼% sinking fund debentures due 1971 (exclusive of $1,800,000 in treasury in 1959 and $1,050,000 in 1958)	12,200,000	13,450,000
3⅛% sinking fund debentures due 1977 (exclusive of $1,103,000 in treasury in 1959 and $1,350,000 in 1958)	13,097,000	13,250,000
	25,297,000	26,700,000
RESERVES:		
For self-insurance	706,293	579,456
For deferred federal income taxes	2,150,000	1,200,000
	2,856,293	1,779,456
SHAREHOLDERS' EQUITY:		
Cumulative preferred stock of $100 par value per share; authorized 250,000 shares, none issued.		
Common stock of $5 par value per share; authorized 8,000,000 shares (168,409 shares reserved under option agreements at Sept. 30, 1959). Issued and outstanding, 1959, 6,488,506 shares; 1958, 6,438,104 shares	32,442,530	32,190,520
Premium received on capital stock in excess of par value (including $514,206 during year ended Sept. 30, 1959)	4,391,246	3,877,040
	36,833,776	36,067,560
Earnings invested in the business (at Sept. 30, 1959, $35,339,254 was restricted as to payment of cash dividends under indentures relating to long-term debt)	106,105,605	96,117,646
Total shareholders' equity	142,939,381	132,185,206
Total	$201,871,147	$193,285,085

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
October 10	831	514	597	566	114	564	1,022	1,880
October 17	724	445	483	524	106	574	1,189	1,833
October 24	949	493	440	633	95	511	1,428	1,765
October 31	931	452	606	579	68	539	1,563	1,869
November 7	960	309	663	617	51	500	1,484	2,069
November 14	975	435	702	628	99	557	1,506	2,092
November 21	934	462	760	583	92	629	1,664	1,838
November 28	931	426	664	524	92	648	1,790	1,908
December 5	912	420	600	576	77	676	1,904	2,053
December 12	891	378	847	628	106	695	1,747	2,234

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
October 10	831	381	2,202	283	4,510	167	2,427	1,554
October 17	658	344	1,841	295	4,500	155	2,306	1,614
October 24	443	235	2,045	293	4,802	148	2,200	1,771
October 31	641	405	2,106	302	5,080	151	2,667	1,801
November 7	860	467	2,103	300	5,051	151	2,588	1,706
November 14	840	489	2,190	318	5,054	150	2,591	1,793
November 21	1,017	402	2,284	317	5,173	148	2,674	1,791
November 28	976	414	2,173	324	5,402	120	2,587	1,903
December 5	1,024	401	2,354	328	5,381	148	2,772	2,030
December 12	1,056	346	2,506	348	5,506	177	2,711	1,944

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1959	Total 22 areas 1958
October 10	2,483	392	1,649	260	185	951	24,443	27,277
October 17	2,656	432	1,707	205	172	891	23,654	26,158
October 24	2,451	325	1,672	252	91	831	23,873	26,076
October 31	2,723	323	1,459	210	134	991	25,600	27,170
November 7	2,690	279	1,490	290	170	1,131	25,976	27,429
November 14	2,815	279	1,508	282	157	1,172	26,658	27,651
November 21	2,813	302	1,607	282	140	1,097	26,990	28,426
November 28	2,962	292	1,646	259	130	1,096	27,267	28,817
December 5	3,192	358	1,771	282	204	1,142	28,605	29,306
December 12	3,140	290	1,725	319	171	960	28,725	29,967

BROILER INDUSTRY

(Continued from page 6)

birds in advance, and the price could not be considered a market factor.

Profit in 1960

But whether the market reports failed to tell the true picture, whether there are actually fewer broilers on feed than reports indicate, whether consumer demand has caught up with production or production has been geared more closely to normal and regular movement of broilers into consumer channels without being "loss leaders," the fact remains that broiler prices have shown improvement the past few weeks and most contractors feel the bottom has at last been reached and the industry can look forward to profitable operation early in 1960.

On the other hand, if broiler prices do not improve to the point that operators feeding out a million or more birds annually can realize sufficient margins to carry them over seasonal fluctuating prices, what will become of the broiler industry?

Several months ago this reporter traveled throughout the major centers of broiler production in the Southeast, and it was the consensus then that many of the "smaller" contractors were going out of business—most of them voluntarily—or were merging with others to build larger single operations.

Credit Factor

It was felt then the credit factor was of prime importance. Several contractors expressed the opinion that restrictions would not be too harsh, and few felt there would be any pressure from banks since they believed the bankers were completely unwilling to close in and take over the broiler business.

When the Chemell operations went broke and bankers foreclosed on mortgaged flocks, these flocks were liquidated as quickly as possible—in some cases the bankers recouping their claims, while in others taking whatever the birds would bring, either as breeders or stewing chickens.

Six months ago, there was some discussion that large feed companies were likely to move in and take over the broiler industry. It was said that some of these companies, through facilities they had at their command, especially through the manufacture and marketing of other food products, were in a favorable position to do the marketing job which some felt the broiler industry was failing to do.

It was said that major feed companies had the resources available to finance large scale operations, and that they could operate on smaller profit margins by putting broiler growing on an even larger scale than was typical of the present "big" operation.

Chemell Situation

The Chemell situation cropped up to discount some phases of this thinking. Despite the fact major feed companies held unsecured debts running into the millions, they did not move in and take over the Chemell operation.

Some point out that the feed companies didn't assume control because there was nothing tangible to take over. Others indicated the feed companies could operate the facilities just as Chemell did—with leased equipment—and having adequate feeding facilities available, could conceivably put the hatching business on a sound and profitable basis.

However, there was no big rush by large feed manufacturers to go into the hatching end of the low-price, low-margin broiler business.

The low prices and losses which many in the broiler industry have suffered would be enough to discourage anyone from getting further extended in this industry, regardless of the particular circumstances of the Chemell situation, it was pointed out.

Small Mills

A decline in the number of independent poultry feed mills in the Southeast was mentioned as an indication the larger feed companies would eventually control broiler feeding.

Some of these mills, while of importance within the area, cannot be classified as major or national mills. Many of these are directing a large portion of their output to feeds other than poultry rations, notably hog and dairy feeds.

Possibly these mills are unwilling to put all their eggs in one basket and are making efforts to balance their business and channel their production into fields which apparently are more financially stable than the broiler business. And possibly, too, some of these mills feel they cannot compete with the large manufacturers and are willing to "let the big boys have the chicken feed."

So it comes back to the starting point—has the broiler industry reached the bottom and will the upturn which is anticipated parallel the early boom days when the industry was getting into the category of big business?

There are many viewpoints—almost as many as the persons interviewed. Some, who have been swallowed up, believe it's only a matter of time until broiler industry control rests with the major feed companies.

There are others, who have managed to hang on the past 18 months, who believe there is still ample room for the individual contractor who is a sound businessman. They say he will be able to secure the necessary credit to operate on a large scale—say anywhere from 3 to 10 million broilers a year.

Horizontal Integration

In some sections of the Southeast, poultrymen believe that integration will be more horizontal then vertical.

Some believe the day of the grower who raises birds on contract on his own farms has passed.

There have been a number of instances where the contractor has transferred all his broiler growing to farms he owns outright, or leases, and hires labor on weekly and hourly rates—and in effect completely integrates his own operation without having the deal with "growers" spread out over a large area.

The rise of the poultry auctions has speeded up this program since the contractor has an outlet for his finished birds without having to contract in advance for their sale. Many believe that contracting in advance for the sale of the birds has a tendency to depress prices, and has in some instances made it possible for large buyers, such as chain stores, to set the price they are willing to pay for broilers. If the processor has previously committed himself pricewise, he is in the position of accepting what the buyer is willing to offer or have to unload an extremely perishable product as best he can.

Independent Contractor

Some believe the future of the broiler industry, as far as the independent contractor is concerned, lies in the continued growth and expansion of poultry auctions. In the past, anyone could buy baby chicks and feed to grow them out to broilers, but the biggest headache was trying to sell them if the processing plant was full to capacity or was unwilling to buy from an independent operator.

With poultry auctions available, the broiler contractor has a better chance to sell his birds. And with obvious credit restrictions from banks, it is not likely an operator who is not competent can secure feed on the cuff for birds that could tend to glut the market at a given time.

There are others who believe that a complete vertical operation on a scale much larger than present normal "big operations" is the only hope of the industry—fewer but larger production facilities.

But irrespective of what trend production takes in the future, almost all who know the broiler industry agree the real future of the industry lies in consumer demand which can be met, permitting a margin of profit that can meet competition from others seeking larger portions of the housewife's food dollar.

PRICING, CREDIT

(Continued from page 7)

tem of egg pricing is at the heart of shortcomings in current methods of establishing and reporting quotations in central markets.

"Although quotation pricing is a widespread practice in the egg trade," he said, "neither the trade nor farmers are fully satisfied with it. . . . This system of pricing originally was developed as an integral part of, and was designed to serve, a system of marketing that is now rapidly disappearing."

The New York meeting's audience was told that one of the most basic changes needed in methods of establishing egg prices is a large increase in the numbers of individual egg marketing firms taking an active part in pricing their own products.

The egg industry itself and especially firms which are taking over primary responsibility for marketing eggs need to assume greater responsibility for establishing egg prices, Dr. Pritchard said.

Credit Code Proposed

A credit guide compiled by "some of the best thinkers in the industry" was proposed by Henry Wentink, sales manager, Miller & Bushong, Rohrerstown, Pa., feed firm, as a step toward eliminating unsound expansion in poultry and egg production.

Mr. Wentink said the guide could contain the advice of agricultural economists regarding credit needs under current conditions, levels of equity and practical methods of payment.

"The suggestions and rules, made by representatives of our own industry, could serve as a code," Mr. Wentink said. "Not an enforceable one as the government would enforce it, but nevertheless a powerful force for good.

"Few lending institutions would exceed the credit limits and recommendations made by an industry board, as these limits and recommendations pertain to members of that industry."

Mr. Wentink further suggested that the "code," in manual form, could be distributed to lending institutions which operate at all levels in poultry production areas or those which discount paper from banks or institutions in these areas.

". . . On matters of soundness in business, we are our brother's keeper," he said. "And in matters of credit and over-expansion, it is high time that we collectively display some responsibility."

Further stating his thoughts on a salesman's responsibility to his customers, Mr. Wentink said making a sale and collecting the money is not enough. The project for which the sale is made must contain at least a majority of the "elements of success."

He asked: "Can you justify your business if it has to depend upon your customers' savings rather than a just share of their profits?"

Says Stability Needed

Dr. George W. Luke, Rutgers University economist, said there is a need for a national program to get greater stability in the production and marketing of eggs in the U.S.

He talked, among other things, about northeastern egg producers' competition from producers in the South and the West. Dr. Luke pointed out that southern competition will increase, but added, "Our greatest competition is western eggs. . . . This competition is with us right now."

Illustrating this point, Dr. Luke noted that in the past two years, shipments of eggs from South Dakota and Nebraska to New York have increased far more than shipments from North Carolina, Virginia, South Carolina or Georgia.

Discussing the role of the integrator and the progress of integration in New Jersey, Dr. Luke reported that egg production under contract in the state is less than 5% of all the eggs laid.

Two feed companies have approximately five contracts with producers who operate average commercial farms of 4,000 - 11,000 birds. Dr. Luke said these companies are conducting case studies or experiments to determine whether they should get any deeper in the production of eggs. He noted, too, that there are in New Jersey approximately eight horizontally integrated operations with flock size ranging from 15,000-60,000 birds.

Dr. Luke said that "the best way to meet changes is by cooperative action of producers in all areas to develop a more orderly production and marketing program."

A panel discussion on "things to come" brought together two geneticists—Dr. Edward Godfrey of the J. J. Warren firm, North Brookfield, Mass., and Dr. Steven King, Mt. Hope Poultry Farm, Batavia, N.Y. They agreed that few plants currently provided the environment that took full advantage of the productive possibilities of the laying strains that are now available. Both looked forward to slow but steady gains in the inherited qualities that would increase flock productivity.

MARKETS

(Continued from page 2)

that there has been any slackening in the demand but rather that things have been inclined to level off. In a broad, general way, December has been noticeably better than November. But, of course, this is a normal seasonal pattern. Mixers would be glad to see an early revival in the momentum that the market was showing during late November and very early December.

Mills are generally operating on a 40-hour week but, here and there, a little overtime is being put in. Improvement in the broiler market that was noted a couple of weeks ago is being held and a normal expectation calls for some enlargement in the demand for broiler feeds if the recent market upturn holds.

Cattle feed is holding its own. There has been some talk about the possibility of demand for hog feeds tapering off a bit before too long. Laying mash is moving, but an increase in the price of eggs would help the commercial mixed feed manufacturer.

Pacific Northwest

Portland and Seattle area feed mixers reported a fair formula feed movement despite the continued seasonal decline in turkey mashes and moderate weather conditions which extended grazing on pastures and low ranges.

Feedstuff prices averaged higher during the week's rather slow trading. Demand appeared spotty, and most feed millers and large feeders are confining purchases to nearby needs.

Trade sources reported that offerings of some principal ingredients were tighter and resulted in some price advances. Market action displayed holiday characteristics and the week closed with trading near a standstill.

Stronger prices were posted by soybean meal. Listings for this ingredient gained as much as $2.50 a ton with linseed meal values up $4 ton for the week and cottonseed meal unchanged to $1 lower.

Fish meal quotes advanced 5¢ a protein unit while wheat millfeed tags dropped $1 ton.

Feed grain quotes averaged stronger with moderate strength in oats, milo and corn, while barley was barely unchanged.

Alfalfa hay trading was very slow in some coastal feeding areas with prices on the irregular side. Portland and Seattle feeding section prices generally held unchanged, but there were some reports that a few sales of good quality offerings were made at lower levels and some at higher levels than the $38-40 range for baled hay delivered.

South Central

Feed sales volume in this area is holding at about the same level as in the past several weeks. Business generally is not quite good enough to maintain five-day production at most mills. The average running time for all mills is probably no more than 4½ days.

Although poor feeding ratios are the basic reason for the light sales, credit is becoming more and more of a limiting factor. Mill credit departments have tightened up considerably and are reluctant to extend additional credit to slow paying accounts. In turn, dealers complain that their customers delay payment longer than expected. Under the circumstances, it seems unlikely that there will be a surge of year-end feed buying for tax reduction purposes.

While this has been a rough year for poultry feed sales, the combination of low egg prices and abundant supplies of relatively cheap corn has resulted in increased use of egg mash concentrate. Sales on this item are running far ahead of a year ago for most mills. Hog feeds continue to dominate the sales picture but cattle feeds are gaining in importance each week. Open weather holds down dairy feed sales.

Ohio Valley

The unpredictable Ohio Valley weather has had no apparent bearing on formula feed business this week. Demand for formula feeds remains steady to slightly higher in the anticipation of the early year spurt in the poultry business.

Furthering this revived interest is the expectation that the more-than-normal consumption of eggs and poultry during the long holiday season will deplete farm flocks to the point where poultry prices will show a sufficient upward trend to justify the resumption of more aggressive production schedules than at any time during the past year.

Obviously, the severe slump in turkey production during the last growing season has had an unfavorable impact on sales of poultry feeds, and area feed manufacturers are hoping for a revival of interest in turkey growing during the year ahead.

Mountain States

The general opinion among feed dealers is that range pellet business is dropping off some. Very few plants are working at the present time, and formula feed business is down from last week, but it is about the same as a year ago at this time.

Prices are low for cattle at the present time, slowing up formula feed business.

GENERAL MILLS DIVIDEND

MINNEAPOLIS — The executive committee of the board of directors of General Mills, Inc., Dec. 14 declared a dividend of 30¢ per share on General Mills, Inc., common stock payable Feb. 1 to stockholders of record Jan. 8. This is the 126th consecutive quarterly dividend on General Mills common stock.

Westbound Rail Rates On Livestock Reduced

SAN FRANCISCO, CAL. — The Western Transcontinental Railroads will "voluntarily" put in reductions in the westbound rates on all species of livestock, including feeder livestock, ranging from 11-15%, according to a notice sent to the Western States Meat Packers Assn., Inc.

There will be some small changes in the minimum carload weights, and the railroads will no longer furnish two single deck cars as a substitute for double deck cars, the notice reads.

"This is good news for the western livestock and meat industry," says E. Floyd Forbes, president. "It will go a long way toward restoring the relationship between rates on livestock and those on dressed meat which were destroyed by the low rates on meats and packing house products established by both the railroads and trucks during the past two years."

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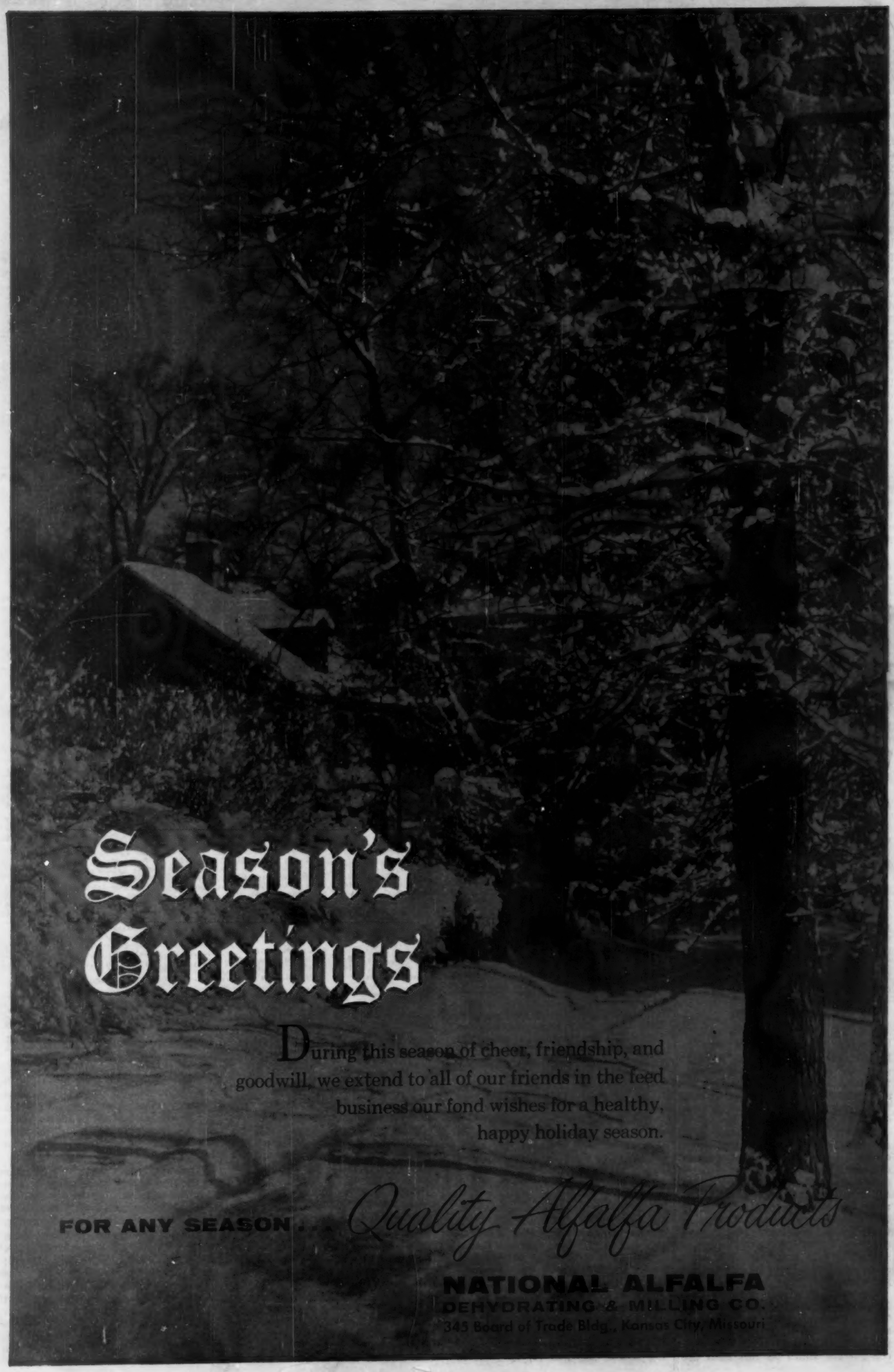
Season's
Greetings
During this season of cheer, friendship, and goodwill, we extend to all of our friends in the feed business our fond wishes for a healthy, happy holiday season.
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